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HARLOW NEW TOWN PLAN
BUILDING TYPES STUDY NO. 169
DECEMBER 1950
MEDICAL OFFICE BUILDINGS

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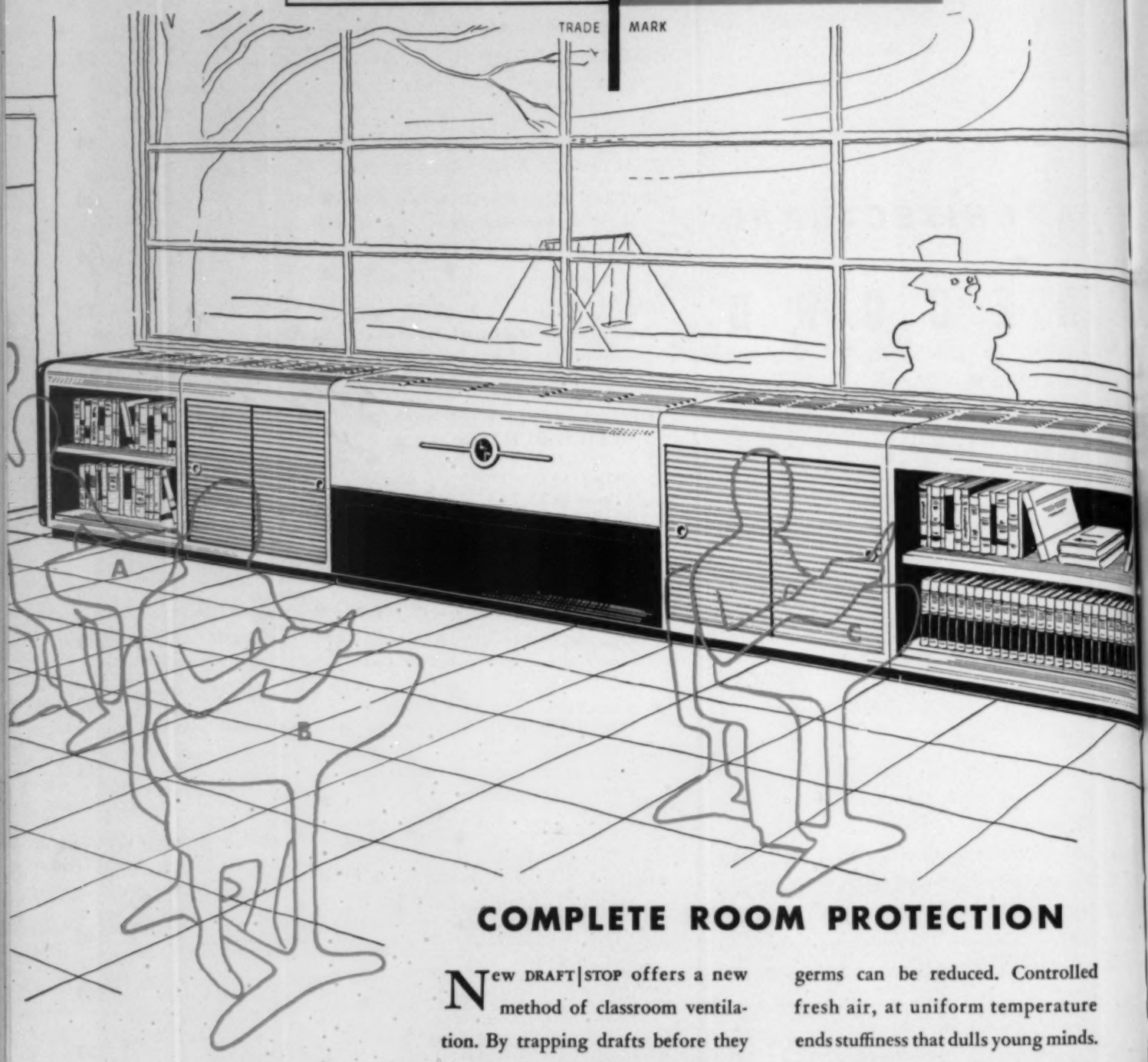

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ARCHITECTS GATHER AT FOUR STATEWIDE MEETINGS; REGIONAL COUNCIL FORMED

Gulf States Regional Council Founded at Louisiana Meeting

FORMATION of a Gulf States Regional Council of the American Institute of Architects was the top news from the fifth annual convention of the Louisiana Architects Association, held November 9–11 in New Orleans.

The new Council, representing A.I.A. chapters and state associations in Arkansas, Tennessee, Mississippi and Alabama, will serve in an advisory capacity to plan regular regional seminars and other activities promoting exchange of information and ideas.

Gulf States Regional Director Howard Eichenbaum is Council chairman, and William Smith of Baton Rouge is secretary-treasurer.

Organizational meetings of the Council were held concurrently with sessions of the Louisiana architects, who managed to enjoy a lot of New Orleans-style sociability between business meetings.

At the annual banquet, Louis Justement of Washington, D. C., the princi-

(*Continued on page 10*)

New York State Architects Hold Convention at Syracuse

AMENDMENT of the state education law to stop licensing of persons who are not architects was recommended in a resolution adopted by the New York State Association of Architects at its three-day annual convention in Syracuse last month.

The resolution recommended appointment of a committee, chosen from the association, to investigate possible violations.

An architectural exhibit and presentation of certificates of award to architects of buildings in four categories highlighted the convention, which also will be memorable for the discussion evoked by the most provocative of its seminars: Traditional Versus Modern Architecture.

Henry V. Murphy of Brooklyn was reelected president of the association. Other officers reelected were: Irving Seelig, Brooklyn, first vice president; G. Morton Wolfe, Buffalo, third vice

(*Continued on page 11*)

Art Graphic Center Photo

New Louisiana officers: 2nd Vice President Richard Murrell, Baton Rouge; Secretary August Perez, New Orleans; President William Bergman, New Orleans; Treasurer Errol Barron, Alexandria; and 1st Vice President William Wiener, Shreveport

Nationwide Pictorial Service Photo

PIETRO BELLUSCHI TAKES M.I.T. ARCHITECTURE POST

PIETRO BELLUSCHI of Portland, Ore., is the new dean of the School of Architecture and Planning at Massachusetts Institute of Technology. He succeeds William Wurster, now dean of the School of Architecture of the University of California.

Mr. Belluschi will join the faculty at M.I.T. on January 1, but he will continue his architectural practice in Oregon until all current and pending contracts are terminated. During this time the oldest associates of his firm will form a new partnership to be known as Smith, Richardson, Kotchik and Allen, which will assist Mr. Belluschi in carrying out his old contracts and will assume new ones on its own behalf, with Mr. Belluschi as the firm's consultant.

Mr. Belluschi came to this country from Italy in 1923, with a degree of Doctor of Architectural Engineering from the University of Rome. After advanced studies at Cornell, he joined the staff of the Portland firm established in 1906 by the late A. E. Doyle. The firm took Mr. Belluschi's name in 1943.

The new dean's past activities have also included a stint as visiting professor in the Department of Architecture at Yale University. He is a member of the National Fine Arts Commission.

LOUISIANA

(*Continued from page 9*)

pal speaker, reviewed 50 years of progress in city planning and architecture and lamented the time-lag in those fields compared with achievements in science and technology. But a developing consciousness of the need for city planning was cited by Mr. Justement as the most encouraging development in architecture in America during the past two decades.

Walter Rolfe, Houston, in his address at an earlier session, had emphasized that "city planning should come from the people and not be superimposed on the people."

Morris Ketchum of New York conducted the seminar on store planning at the final business meeting. More regional store architecture to make design suit individual areas was urged by Mr. Ketchum.

A.I.A. President Ralph Walker addressed the luncheon session on the final day. Convention speakers also included A.I.A. Vice President Glenn Stanton of Portland, Texas Regional Director Thomas D. Broad, and Mr. Eichenbaum.

William E. Bergman of New Orleans is the new association president, succeeding Ralph Bodman of Baton Rouge. Other new officers are William B. Wiener, Shreveport, first vice president; Richard C. Murrell, Baton Rouge, second vice president; August Perez, New Orleans, secretary; and C. Errol Barron, Alexandria, treasurer.

Dallas Times-Herald Photo

Dallas Morning News Photo

Snapped at the Texas convention: Above—Jack Corgan, Dallas; Edward Wilson, Herman Cox, Robert Woltz, all Fort Worth; George Dahl, Dallas. At right: Raymond Phelps, Mr. Purves, Herbert Tatum

TEXAS SEMINARS SPOTLIGHT LIGHTWEIGHT CONSTRUCTION

MORE THAN 150 Texas architects met in Dallas early last month for the 11th annual convention of the Texas Society of Architects.

Architect Welton Becket of Los Angeles and Walter P. Moore, Houston engineer, were the speakers for the seminar sessions on lightweight construction.

A.I.A. Executive Director Edmund Purves was the convention's keynoter; and speakers also included Ralph R. Kaul, head of housing and community facilities for the National Security Resources Board, whose topic was "Architects in Atomic Warfare"; and A.I.A. Second Vice President Kenneth E. Wischmeyer, who was principal speaker at the annual dinner.

Raymond Phelps of San Antonio was elected president of the Society and Herbert Tatum of Dallas, vice president; Mr. Phelps named Richard Vander Straten of San Antonio as secretary-treasurer.

D. A. Hamilton, head of the department of architecture at Oklahoma A. & M., was judge for the convention exhibition. Awards went to owners of buildings, as a salute to their part in making it possible for the architect to do a good job. The architects received certificates.

Architects cited were: Golemon & Rolfe, Houston — St. Francis Cabrini Hospital, Alexandria, La., and St. Theresa School, Houston; Stone & Pitts, Beaumont — Houston Coca Cola Plant; Staub & Rather, Houston — Fondren Library, Rice Institute (ARCHITECTURAL RECORD, June 1950), and their own office building; Robert L.

Art Graphic Center Photo

Charles Ralph Colbert, New Orleans, designed exhibit, which will tour state

White, Dallas, and Walter Cocke Jr., resident architect — Memorial Grand Lodge Temple, Waco; Gabert, McKie & Kamrath, Houston — Temple Emanu-El, Houston; Thompson H. McCleary, Houston — own residence; Grayson Gill, architect, and George Harrell, associate, Dallas — Rio Grande National Life Building, Dallas, (ARCHITECTURAL RECORD, November 1950).

Illinois Meeting Held

THE ARCHITECTS ASSOCIATION of Illinois met late in October at Springfield for sessions which were reported quite stimulating for the 65 members who attended.

Tracy B. Augur of General Services Administration, Architect Curzon Dobell and Rea Esgar were among the speakers; and Joseph Booton conducted a guided tour of the restoration at New Salem.

Edward Kane, Edwardsville, heads the Association. Other officers are J. R. Fugard, Chicago, vice president; and E. E. Lundeen, Bloomington, secretary.

NEW YORK (*Continued from page 9*)

president; Maxwell A. Cantor, Brooklyn, treasurer; and John W. Briggs, Rochester, secretary. Leonard Waasdorp, Rochester, succeeded George B. Cummings of Binghamton as second vice president.

A.I.A. President Ralph Walker was among the speakers, who also included Prof. Eric A. Arthur of the University of Toronto Department of Architecture and Brig.-Gen. Washington Platt, head of Syracuse University's administrative engineering department.

Edgar I. Williams of New York, programmed to uphold the Traditional, and Philip Johnson of the Museum of Modern Art, for Modern, managed to find a pretty wide area of agreement in the seminar they shared. Architectural Editor Douglas Haskell of *The Magazine of Building* was moderator.

Other seminars were conducted by James McElroy of the National Fire Prevention Association (Fire Prevention) and Gilmore D. Clarke, American Association of Landscape Architects president (Landscape Architecture).

Awards in the architectural exhibit were made as follows:

Commerical — Carol Antell Specialty Store, New York City; Seymour R. Joseph of Joseph & Vladeck, architects.

Domestic — Residence, Cazenovia Lake, N. Y.; Peterson & Hueber, architects; residence, Manhasset, N. Y.; Olindo Grossi, architect (ARCHITECTURAL RECORD, Nov. 1950).

Ecclesiastical — No award.

Educational — Passaic, N. J., Comprehensive Senior High School, Kelly & Gruzen, architects; Colton-Pierrepont Central School, Colton, N. Y., Sargent, Webster, Crenshaw & Folley, architects.

Industrial — No award.

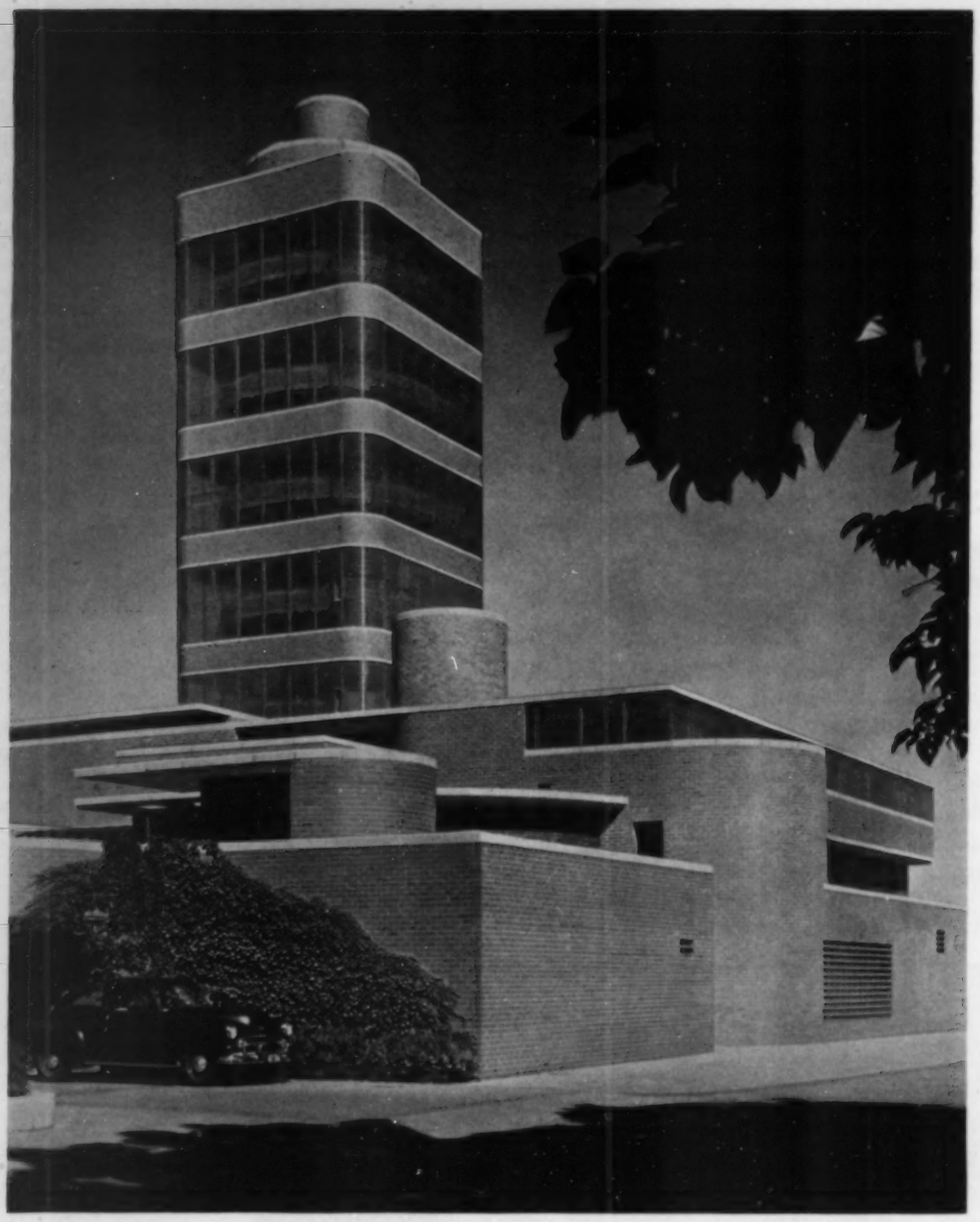
Institutional — Tuberculosis Hospital, Rio Piedras, P.R., Isadore Rosenfield, architect; St. Barnabas House, New York, Ketchum Giná & Sharp, architects.

Public works — No award.

Several Mentions were listed in addition to awards.

Photo at left: New York State officers. Seated: Maxwell A. Cantor, Brooklyn—treasurer; Henry V. Murphy, Brooklyn—president; John W. Briggs, Rochester—secretary. Standing: Leonard A. Waasdorp, Rochester—second vice president; Irving Seelig, Brooklyn—first vice president; G. Morton Wolfe, Buffalo—third vice president

When the newly-appointed members of the National Fine Arts Commission had their first meeting in Washington, they were entertained at luncheon by the American Institute of Architects. Pictured at right, with the Octagon in the background, are (left to right) Felix W. de Weldon, Joseph Hudnut, George Biddle, David E. Finley, Albert Peets and Pietro Belluschi, M.I.T.'s new dean of Architecture and Planning



First pictures of entire group of buildings designed by Wright at Racine: photo below shows research tower and adjoining buildings just completed and (at right) administration building, opened in 1939. Above: closeup of tower

NEWS FROM WASHINGTON *by Ernest Mickel*

Revision of NPA Order Banning "Amusement" Construction Follows Bitter Opposition from Industry; A.I.A. Keeps in Touch with Defense Plans; Federal Aid Programs Revised To Meet Budget Cuts; "Essential" Public Works Continue

RAPID DEFENSE developments in Washington during the past few weeks have cast new light on the place of architecture and contract construction in the war program. Taken as an immediate adjustment, or a long-range plan, the federal changes unmistakably spell out a significant change from the business-as-usual pattern. From now on, architects and contractors will do their future planning with this changing picture in mind. Probable material shortages — certain in the common metals — seem certain to be much in the news. Aside from metals, indications are that cutbacks in residential building will remove most material difficulties.

The architects are shifting their attention to federal defense programs. The National Production Authority has banned all further commencement of amusement, recreation and entertainment buildings. The NPA order (M-4) carried a direct threat that going construction of other types might be halted at a later date if it did not contribute to the defense effort. On the immediate complaints from the Associated General Contractors and other segments of the industry, the agency a few days later revised its M-4, removing the retroactive reference. Contractors said they were satisfied. But the fact remains that the control agency, with its broad authority flowing from the National Defense Production Act of 1950, has power to curtail construction drastically.

Section 22.12 of the Order lists 44 types of amusement, recreation and entertainment construction specifically prohibited. The regulation, which took effect October 27, also contains the catch-all phrase: "Any other recreational, amusement or entertainment purposes, whether public or private."

Washington Visits Unnecessary

The new personnel appointments in NPA are important to architects insofar as the agencies' powers can be applied in the fields of building materials and construction controls generally. And as stated, those powers are broad.

James W. Follin, whose name is familiar to architects and engineers, is on loan from General Services Administration to head NPA's construction controls division. And John Haynes, another person familiar to the industry, will head the agency's building materials division. In these respective capacities, Follin and Haynes will serve under H. B. McCoy, assistant administrator of NPA in charge of industry operations.

The Follin section will deal with administration policy concerning the various limitation orders on construction. It already has made a thorough study of M-4 and its application to date. Staffs are being organized. Amendments to present orders are being studied.

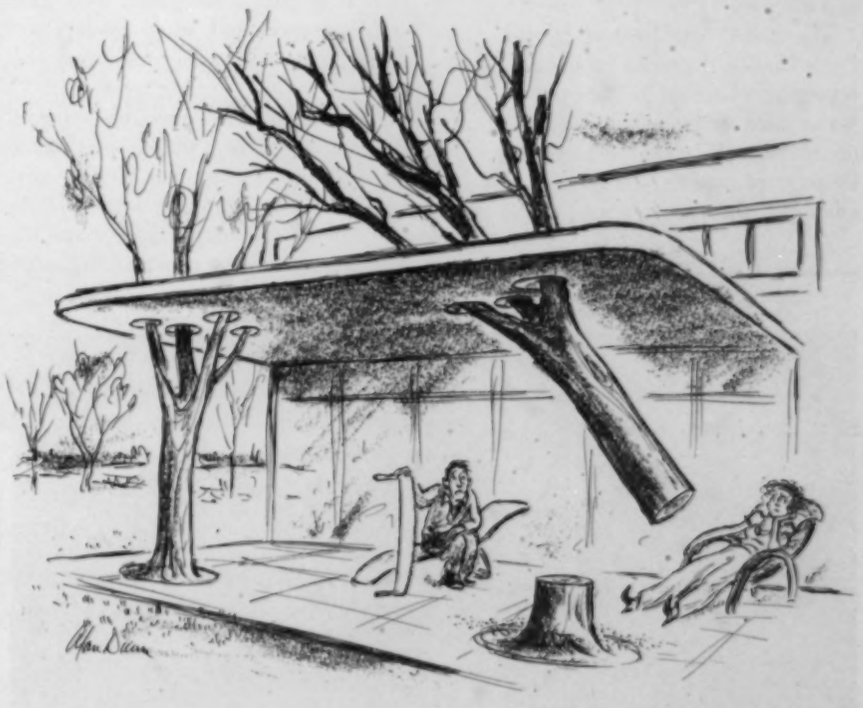
Another name familiar to the building industry, that of Frank R. Creedon, former federal housing expediter, appeared on the NPA appointment list. He was named to organize and direct a Facilities Clearance Staff to handle applications for certificates of necessity in connection with industrial expansion for the defense program. The applications, concerning a shortened amortization period for tax purposes, come over to NPA from the National Security Resources Board which makes the final determination.

While these important developments take place in Washington, architects are being advised it is not necessary for them to come to the nation's Capital to make inquiry about new commissions. The various bureaus and agencies have attempted to make all pertinent information available through field offices of the Department of Commerce (of which NPA is a part) and the General Services Administration, the procuring agent for the federal government.

A.I.A. Keeps in Touch

A complete inventory of the architectural profession is being established at A.I.A. headquarters here on I.B.M. cards. Returns to earlier questionnaires sent out to all registered architects concerning their experience and present capacity to serve the defense effort are still coming in and being tabulated at the Octagon. Further, A.I.A. has issued

(*Continued on page 16*)



— Drawn for the RECORD by Alan Dunn

WASHINGTON

(*Continued from page 15*)

a scratch list of federal agencies that are engaging outside architects for their projects now, or can be expected to do so at some future date.

For some months special emphasis has been placed on the plans for future development of Air Force bases. With approximately 100 master plans to be prepared, the architects are watching developments with keen interest. The construction of airport runways, buildings and appurtenances in this long-range effort may eventually involve expenditures of $25 million to $100 million in each case.

A pattern for selection of architects and engineers from the various professional fields may have been established for this long-range program in methods employed in naming designers for the new Washington, D. C., airfield. Here, Civil Aeronautics Administration considered naming a team of architects and engineers to collaborate on preparing plans for the $14 million project. This new method of approach could set a precedent not only in its peculiar application to single projects, but in the field of mutual interest and cooperation among the professions as well.

Services represented on the Washington airport planning team included architectural, civil, electrical, landscape and mechanical.

The A.I.A. was advised by the Air Force that on the larger program a project architect would be selected by the major area command subject to final approval by Washington headquarters. Because of rapidly changing technical advances, the Institute said it did not

(*Continued on page 18*)

Photograph by Troller

King George VI School, Chatham, Ont., one of the buildings shown in the 1950 exhibition of Canadian Contemporary Art. Architect for school was Joseph W. Storey

NEWS FROM CANADA *by John Caulfield Smith*

Ontario Architects Report Public Relations Research

THE ONTARIO Association of Architects Committee on Public Relations, headed by Douglas E. Kertland of Toronto, has published an interesting report on the subject of architectural public relations. A summary of the results obtained from investigating current activities in the field reveals that:

"Architectural organizations in Canada, the United States and the United Kingdom seem to be well aware of the need to acquaint the public with what architecture is and what an architect does. Most have public relations programs.

"The common denominator is regard for architecture as a public service, and for architects as suppliers of that service. Invariably, emphasis is laid on the pre-eminent and unique place the profession occupies in the construction industry. In other words, no other artisan or technician can be an adequate substitute for an architect.

"The R.I.B.A. public relations program is the oldest among those of the architectural bodies studied. Those of the A.I.A. and its larger chapters are more recent, and in some aspects far less conservative. For example, it is the custom in the United Kingdom to wait for the press to come to the R.I.B.A. seeking news. The most active A.I.A. chapters, on the other hand, initiate events to secure press space.

"The R.A.I.C. depends for its public relations program on the Standing Committee on Public Information. Considerable work has been done under various chairmen, but it is difficult to measure what has been accomplished. This is always the case with public relations activities. Achievements cannot be

(*Continued on page 210*)

Toronto Public Library Photographic Service

This branch public library for Toronto represents "a milestone in library planning." Ground floor houses adult circulating library and three retail stores. Second floor accommodates the boys' and girls' library and some office suites. Third floor will be all offices. Rental income from offices and stores is expected to amortize capital cost in 20 years. Beck and Eadie are architects

31 PEELLE MOTORSTAIRS in the gigantic New York Port Authority Bus Terminal

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WASHINGTON (*Cont. from p. 16*)

necessarily follow that past experience in design of airfields should be the prime reason for such selection. It made the suggestion that associations of engineering specialists under the leadership of an architect might be considered.

The Institute's committee also recommended that architects be selected as acceptable on the basis of qualifications and ability to perform. The preferred architect would then be called in for complete negotiation on one of the following two bases:

1. Provided full scope, cost of construction and performance time can be established, a lump sum contract can be agreed on.

2. Where project is of indeterminate nature as to scope and/or performance time, the compensation should be on the basis of a fixed fee plus reimbursable expenses.

If this first negotiation is not successfully completed, it was suggested that it be permanently terminated, and the next acceptable architect called in for negotiation.

This is but one of the "defense fields" in which architects are showing special interest as the emphasis changes to defense projects.

Budget Bureau Trims Widely

Another program important to architects that will not be crippled badly by the budget cut is the Community Facilities Service advance planning for non-federal public works. Housing Administrator Raymond M. Foley has announced that the program will be realigned with project applications brought under two new criteria. Now, the CFS staff is weighing applications in the light of (1) whether projects contribute directly to defense; and (2) whether projects meet essential and immediate civilian requirements.

Savings under this new approach are estimated to be $15 million in the fiscal year. Approximately 700 applications for the interest-free loans to help states

(*Continued on page 20*)

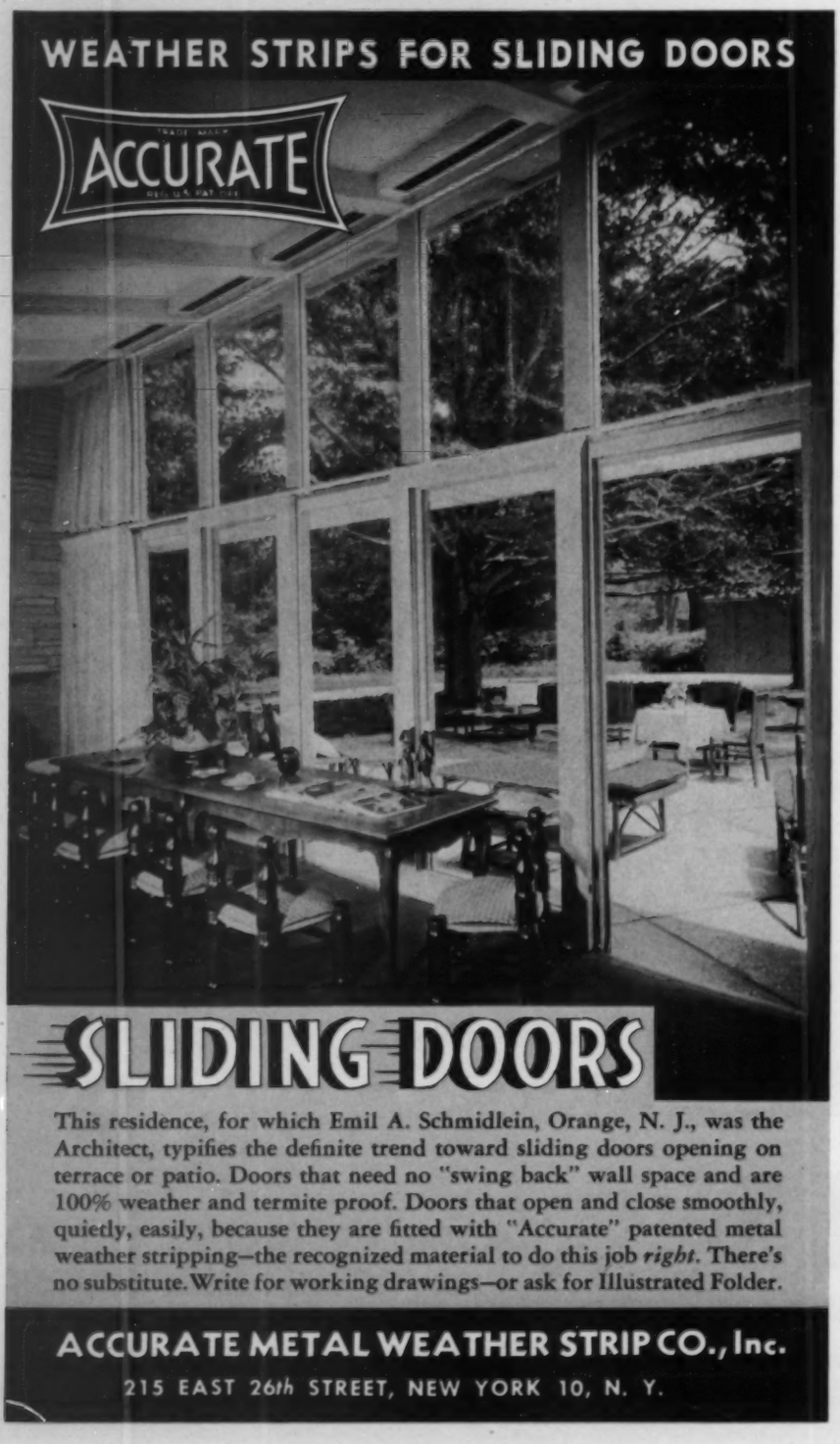
Design Data Needed by Nuclear Science Group

Architects who have designed or completed projects involving facilities for the use of radio-active materials are being asked to inform the A.I.A. Committee on Architecture and Nuclear Science.

The committee, which also seeks a list of architects who have worked on projects of the Atomic Energy Commission, is collaborating with A.E.C. and other technical groups to compile information for architects on design of projects requiring facilities for handling products of nuclear fission.

Information should include a brief description of the projects, the special purposes of the buildings and related problems, like housing for experimental animals, etc.

Communications should be addressed to: Committee Chairman Thomas K. Fitzpatrick, Iowa State College, Ames, Iowa, with copy to Department of Education and Research, the Octagon, 1741 New York Ave., N.W., Washington 6, D. C.



This residence, for which Emil A. Schmidlein, Orange, N. J., was the Architect, typifies the definite trend toward sliding doors opening on terrace or patio. Doors that need no "swing back" wall space and are 100% weather and termite proof. Doors that open and close smoothly, quietly, easily, because they are fitted with "Accurate" patented metal weather stripping—the recognized material to do this job *right*. There's no substitute. Write for working drawings—or ask for Illustrated Folder.

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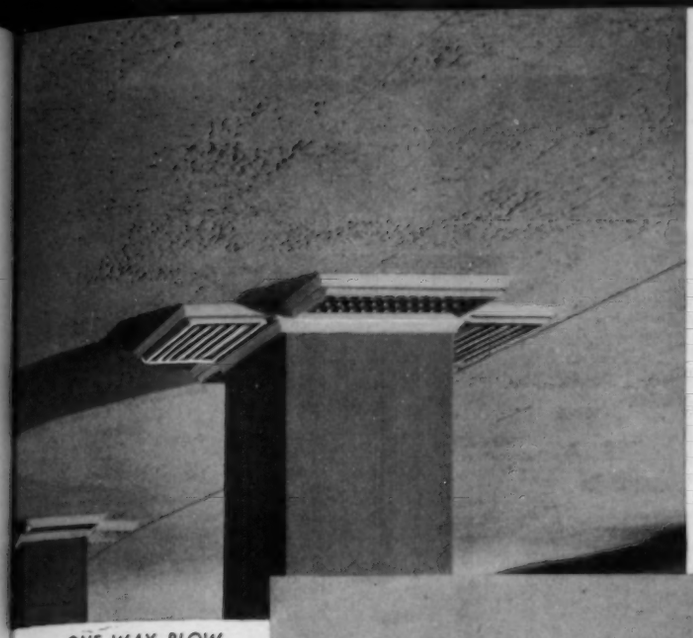

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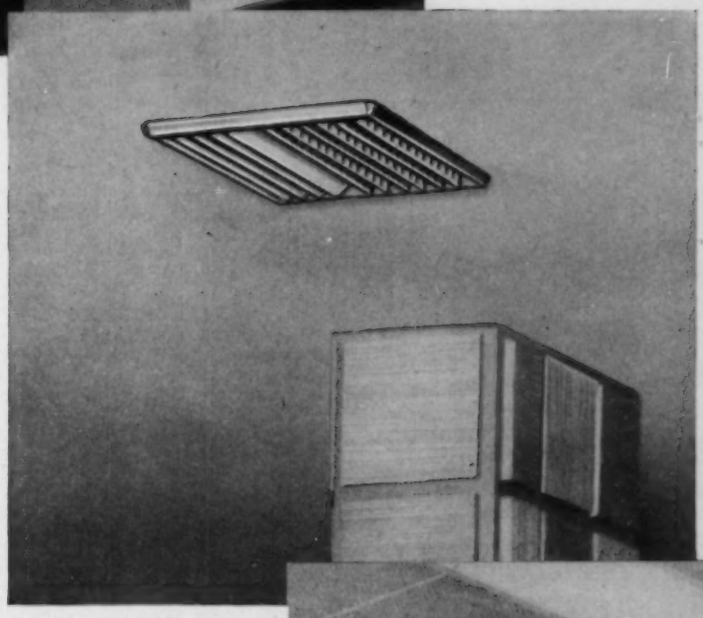

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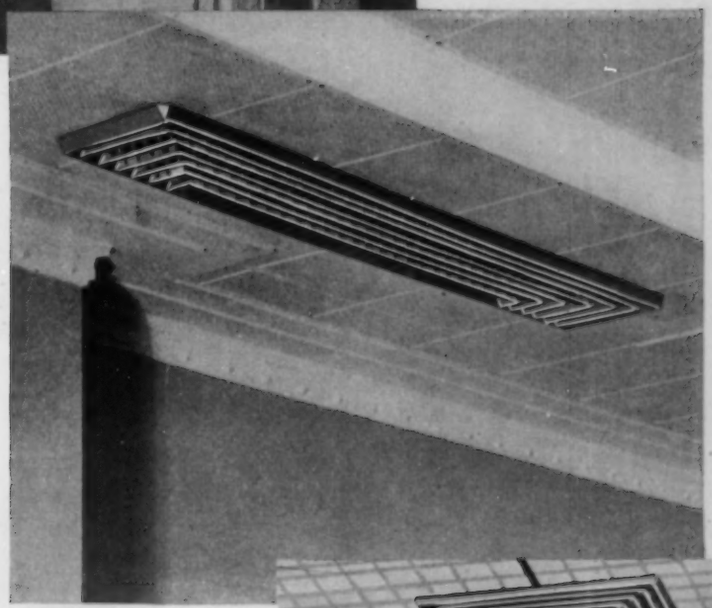

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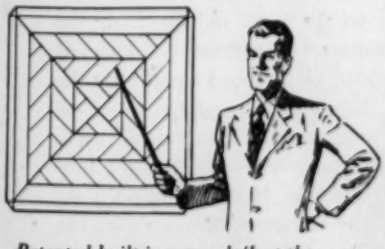

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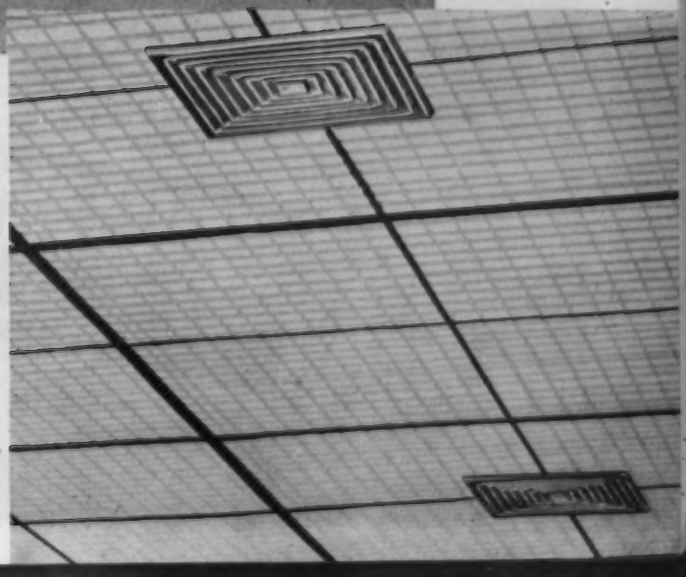

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WASHINGTON (*Cont. from p. 18*)

and their political subdivisions plan non-federal public works are on file in CFS field offices and in the headquarters office here. All are being restudied under the new criteria.

Budget Bureau, in making its general reduction in the 1951 appropriations bill, slashed the program $15 million. Congress has provided $47 million for fiscal 1951. But another $10 million has been reserved for release if need warrants. This means it can be used during the fiscal period if emergency situations warrant. Potentially, this leaves $32 million that could be used; $22 million assured for orderly continuation of the planning of these schools, streets, sewers, waterworks, hospitals, municipal buildings and other non-federal projects.

Commissioner Pere F. Seward has directed his field offices to consider applications for projects which measure up to this definition of essential civilian requirement: any public works "the lack of which would seriously impair the health or lives in the community, or deprive the community of the minimum public facilities required to meet the basic American standards of living, transportation or commerce." Upon broad interpretation, this could leave the door open for many projects that at first glance would appear to be barred in the realignment order from Mr. Foley.

(Under a Presidential reorganization plan approved by Congress, CFS was transferred some months ago from the General Services Administration to the Housing and Home Finance Agency.)

In all, 31 departments and agencies felt the economy wind blowing out of the Budget Bureau. The fiscal authorities cut a total of $580,271,335 from the fiscal 1951 appropriations act — at the direction of Congress itself — and placed the amount in reserve status. Congress had required that it trim the over-all amount by not less than $555 million.

Here are examples of how some of the planning and construction programs were affected: Housing and Home Finance Agency was cut $15,750,000 in total; Agriculture's rural electrification loans, $66,427,000; Farm Housing loans, $24.5 million; Army's Corps of Engineers, $50 million; Interior's Reclamation and power marketing agencies, $56,950,000; General Services Administration, $21.5 million.

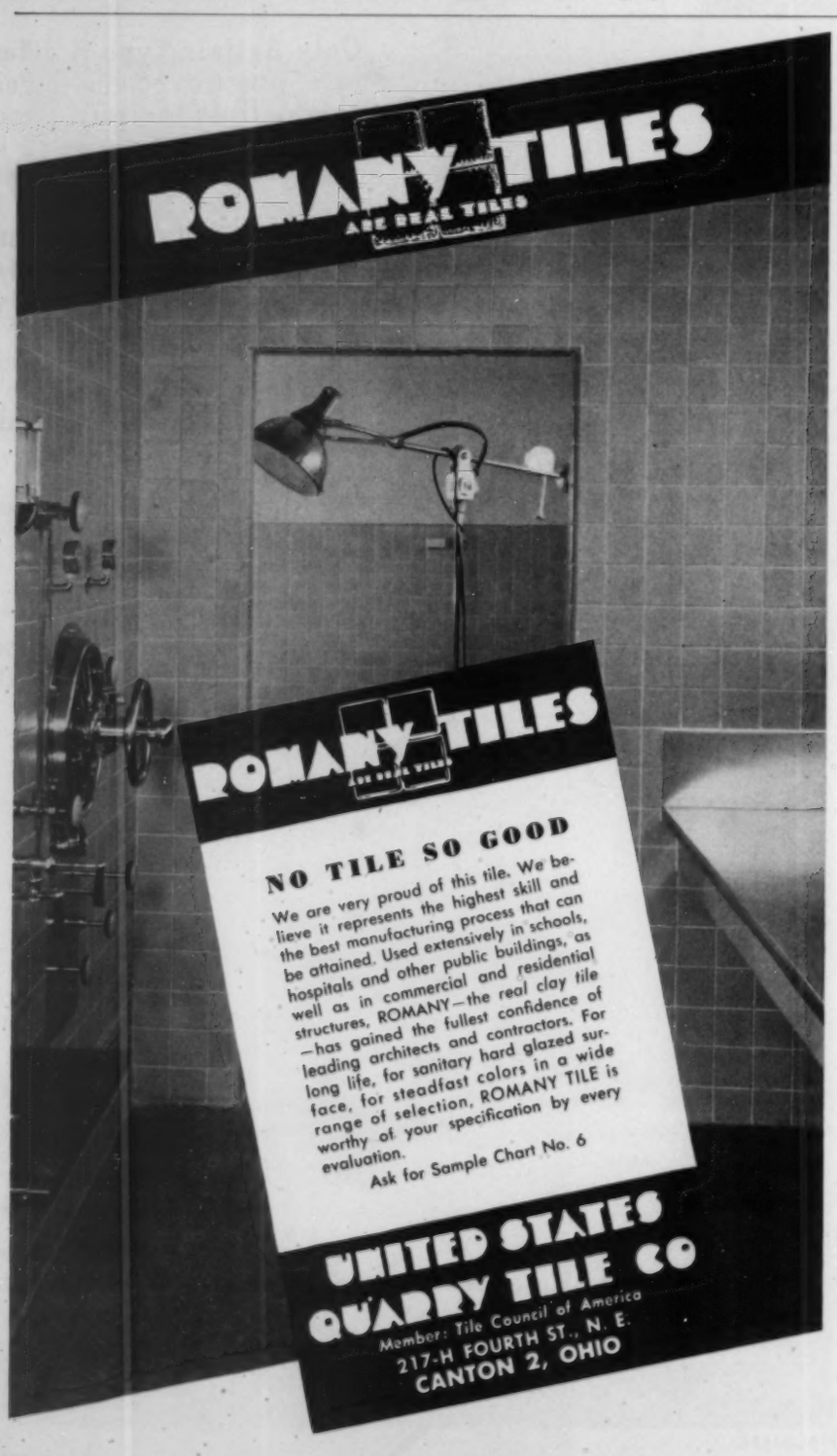
School Construction Needs

The state-by-state survey of school inventory and school construction need will go forward but with some limitations. The U. S. Office of Education was left with $3 million for federal contribution to the effort after the Budget Bureau trimmed $2 million from the Congressional appropriation. This $3 million is to be matched equally by the states themselves, resulting in a $6 million program if all the funds are used.

Unlike many other federal aid programs, this one has no cut-off date specified by Congress. Presumably, the Office of Education will determine the period in which funds will be allocated. (Dr. Ray Hammond of this office is expected to handle details of the program.)

Before the work actually gets underway, officials will confer here with experts in the educational and building fields. They want to learn more about

(*Continued on page 22*)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THE RECORD REPORTS

WASHINGTON

(*Continued from page 20*)

school construction standards and details of general need than now are known. Most immediate objective is a general process for obtaining data required — how much school plant is needed and where it should be erected. Formats of a general nature will be worked out toward this end. After the general definitions are laid down and summarized, the program can move into the actual count of existing school facilities, the inventory phase. Then will follow the estimate of need, the number of new classrooms that must be built to accommodate adequately the growing student population.

(Note: The national school plant need has been estimated in a very general way at $1 billion per year for the next 10 years. And this estimate was made when construction prices were considerably lower than they are right now.)

Final step in this tentative program of the Office of Education would be selection of actual site locations, where the new schools are to be placed.

Inventory and estimate must be both quantitative and qualitative, which poses a pretty large problem for the federal authorities. They plan to leave the big end of the inventory and need estimates job to the states themselves.

The officials are faced immediately with this problem — Congress did not provide for re-use of state allocations which state school bodies decide not to accept. Attorneys have read the law to mean that any allotment thus refused by a state must revert to the Treasury and cannot be reallocated. Some states are bound to turn down the offer of federal aid, it is believed. Still another reason the program will be slow in getting started is that many state legislatures, most of them in fact, do not convene until January. And it will take legislative action in many instances to appropriate state monies to match the federal aid.

Various bills were introduced in Congress looking toward relief of the critical classroom shortage. However, the only one enacted into law which provided actual construction funds was that authorizing direct federal assistance in erection of buildings in defense-industry areas.

Public Housing Penalized

Rising construction cost has been no respector of the federal government's public housing plans. Congressional authorization for construction of 135,000 low-rent public housing units each year for six years came as early as 1949; in the Housing Act of that year. But an unusual lethargy has restrained the program to this date. And now high building costs are slowing progress to a walk.

The Housing and Home Finance Agency, of which the Public Housing Administration is a part, expected the program to move slowly. But officials concede they had hoped for a much more rapid pace than is being reported.

The first official cutback came shortly after the Korean outburst. President Truman ordered that only 30,000 units be constructed during the last half of 1950. (The Chief Executive can lower the output as far as he likes, and raise the total number at his own discretion up to a top limit of 200,000 units per year.) But this check on volume was as nothing compared to the influence of high building prices.

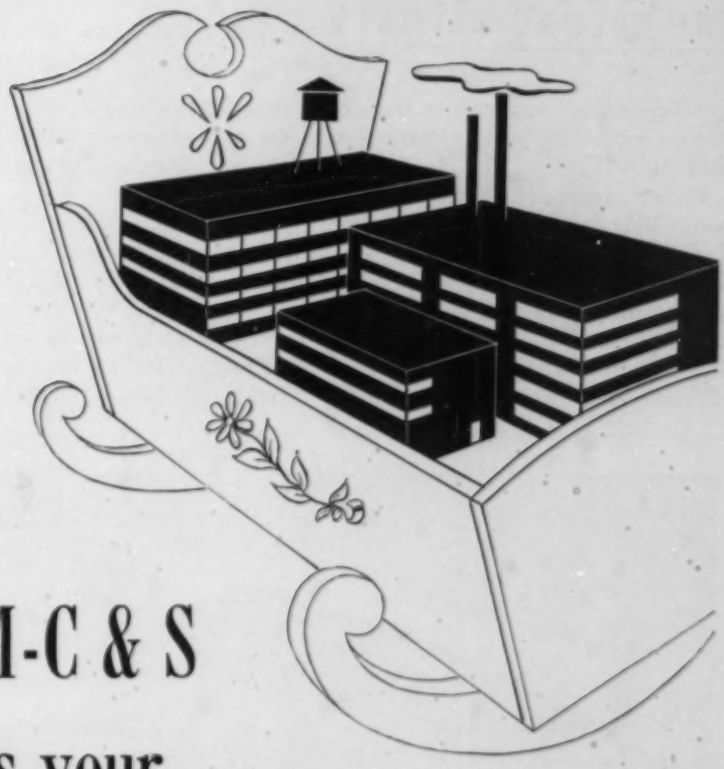
All this gives rise to a disturbed feeling among architects because the trend obviously is toward simplification of plan to bring contemplated developments within the pocketbooks of the local housing authorities — and, not so incidentally, to look toward future justification of outlays before Congress.

PHA is authorized to spend $363 million each year of the program to subsidize rents in the public housing projects to furnish adequate housing for those who can't afford private dwelling space.

But the greatest problem now arises from what local authority units can and cannot get for their money. Too many of these local groups have failed to be realistic about their plans; and this has PHA in a tizzy because it is forced to reject a large proportion of plans submitted — send them back for redoing.

The public officials in Washington have a point in urging the local bodies to cut out the frills and too-elaborate planning. Some layouts have been received showing carports and other extravagant features the PHA people hardly would dare to approve on a low-rent public housing project. Frequently these plans are returned to the local authorities who are told to cut off the fancies, get other bids, and resubmit to Washington. Surprisingly, many of the

(*Continued on page 24*)



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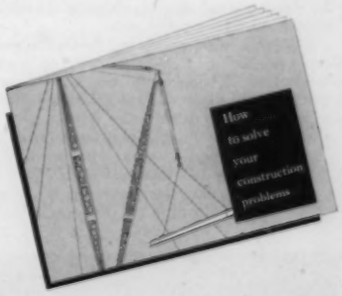

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WASHINGTON (*Cont. from p. 23*)

resubmissions are approved on the second try without much loss to basic plan ideas, the PHA said.

Private architects, however, have been telling Commissioner John Taylor Egan about the danger of too great a sacrifice in the redesigning process. They see important values lost in minimizing space. The agency's new density standards for various types of buildings — an effort to reduce site and site improvement costs — also is open to question. On the advantage side is the move toward setting a more uniform basis of cost estimating.

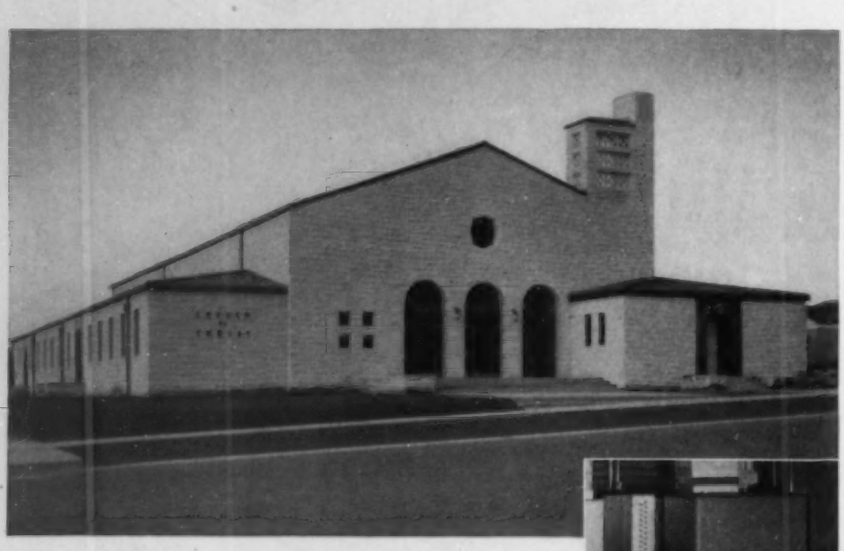
PHA feels the trend toward over-elaborate designs on the part of local authorities and their architects is fully as important in the relatively high rejection ratio here in Washington as the inflated costs. To further assess the trend, the agency studied five main phases of 100 projects submitted for approval. These elements were site plan and type of building, dwelling layout, dwelling space, construction type and finish.

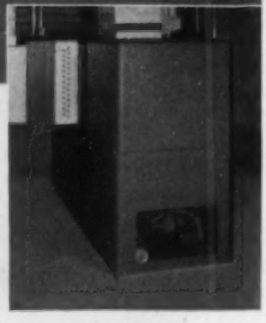
The phases were rated independently, meaning 500 elements were evaluated in all. Of these, 148 were rated expensive or very extravagant and resulted in 52 of the 100 projects surveyed being ruled out on the basis of undue costs.

A month ago, PHA had given final approval to 162 low-rent public housing projects. Final construction of these will involve approximately 50,000 units, one third of which will be placed in New York and New Jersey.

As of October 20 last, President Truman had approved PHA loans to local housing authorities for preliminary planning of 283,676 units. The loans totalled $53,661,000 and reached into 601 localities. These preliminary planning loans permit the local groups to contract for surveys, preparation of plans, and all such work except the final drawings.

Housing of this type is built, owned and operated by the local housing groups, though Washington keeps close tabs on each project because of its considerable financial interest in the subsidized rents. The loans being approved by the President now are to cover construction contemplated during the next two years. PHA enters into preliminary loan contracts with the local authorities as soon as possible after the approval from the White House so advance preparations can get underway.





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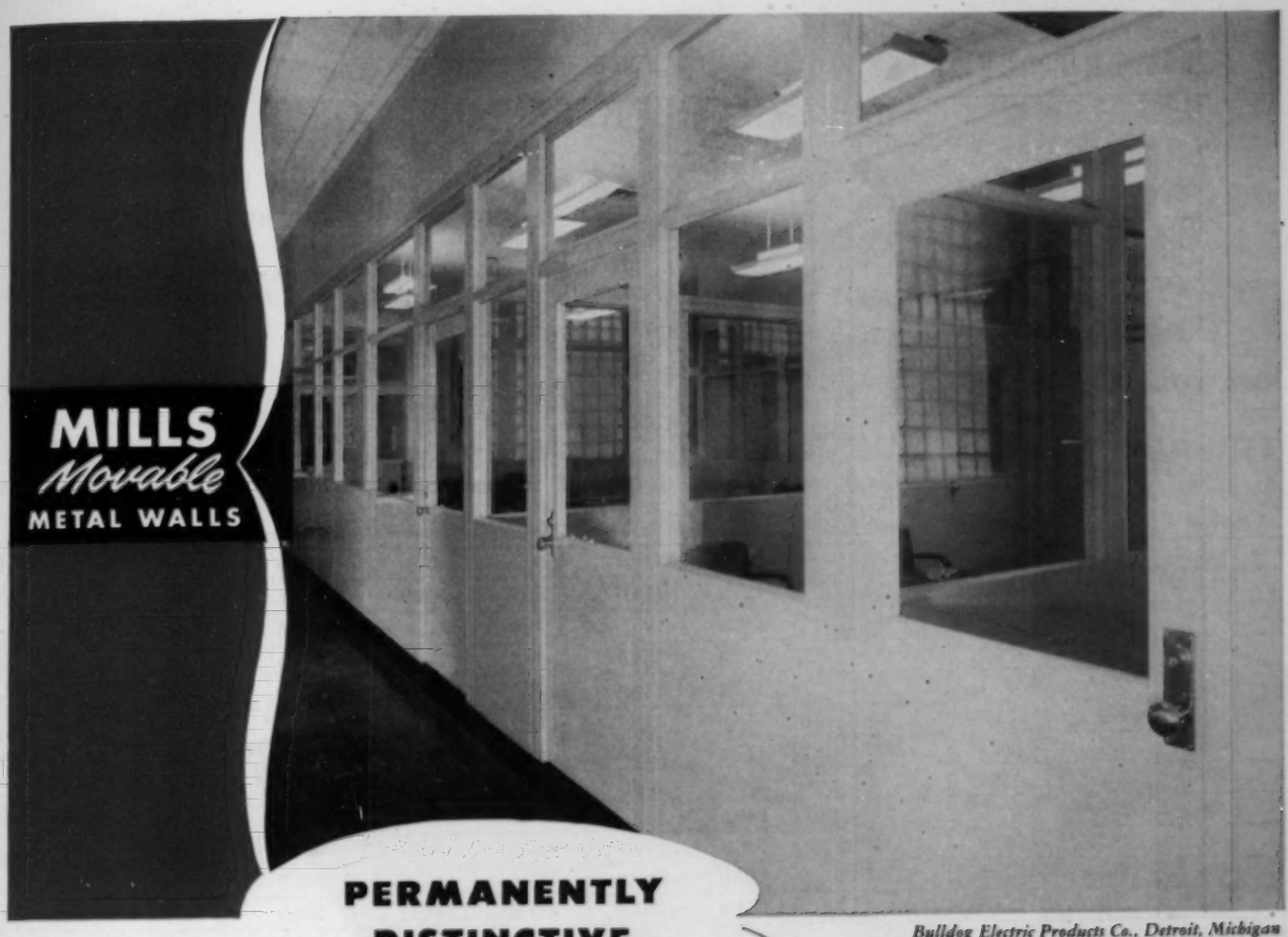
(*News continued on page 194*)



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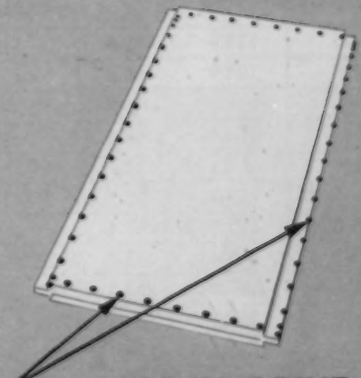

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CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
July 1950	261.3	261.0	251.1	252.6	250.0
Aug. 1950	264.5	265.0	252.1	253.3	251.1
Sept. 1950	266.0	265.5	254.9	256.9	252.7
	% increase over 1939				
Sept. 1950	115.4	116.9	95.0	92.6	94.2

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
July 1950	195.4	198.2	183.8	181.2	182.4
Aug. 1950	201.5	204.1	188.9	187.2	190.0
Sept. 1950	199.1	200.9	189.4	187.6	190.7
	% increase over 1939				
Sept. 1950	130.7	141.8	99.2	92.6	101.4

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
July 1950	237.1	235.0	223.9	227.7	223.9
Aug. 1950	240.0	238.6	224.9	228.6	225.0
Sept. 1950	240.2	238.8	225.5	229.0	226.4
	% increase over 1939				
Sept. 1950	118.0	123.2	90.0	91.2	90.3

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
July 1950	232.6	229.7	224.0	225.6	224.1
Aug. 1950	236.7	234.8	225.4	226.1	225.1
Sept. 1950	236.2	234.1	225.6	226.2	225.6
	% increase over 1939				
Sept. 1950	123.7	135.8	92.2	85.6	93.6

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

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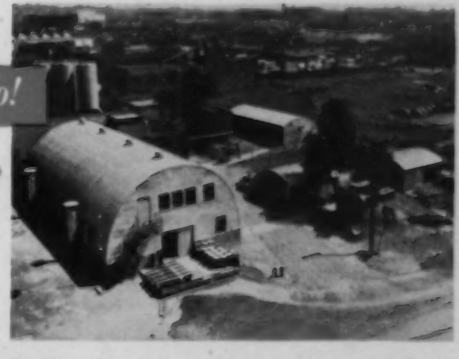
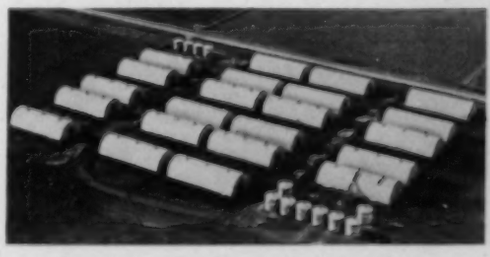


The Arco Company, producer of industrial paint, needed maximum fire safety for its lacquer manufacturing division at Cleveland. It chose Quonset buildings, centering production in the Quonset 40x80 in foreground. Nitrocellulose and other combustibles are stored in nearby smaller Quonsets.



An example of Quonset speed

88,000 SQUARE FEET OF STORAGE SPACE COMPLETELY BUILT IN ONLY 45 DAYS—This grain storage depot at Beresford, S.D., was part of last fall's Department of Agriculture program. More than 2,500 Quonsets were erected at 803 different midwestern locations, providing storage space for over 80 million bushels.

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REQUIRED READING

CITY PLANNING

The Urban Pattern. City Planning and Design. By Arthur B. Gallion, Dean of Architecture at the University of Southern California; in collaboration with Simon Eisner. D. Van Nostrand Co., Inc. (250 Fourth Ave., New York, N. Y.), 1950. 7½ by 10¼ in. xi + 446 pp., illus. $12.00.

This volume might well have been titled *An Introduction to City Planning.* Although the author's approach provides a realistic survey for architects, city planning officials and other professionals, it most certainly presents an excellent overall picture of urban development for the student and the serious general reader. The factors that have confronted and conditioned the evolution of the city are set forth from its earliest beginnings in civilized societies, and the discussion of these influences is supplemented to an extraordinary degree by profuse and well-chosen plans and photographs. An outstanding feature of the illustrations is the use of extended analytical captions which greatly facilitate subsequent detailed study of a particular point without interrupting the broader discussions of the running text.

The authors point out that few cities in which great cultures have thrived began with a plan. Their growth has been dynamic and sensitive to changes in the interests of the citizens. As Dean Gallion, in his preface, says, ". . . it is apparent that the social order of the times has invariably fixed its impression upon the shape — the form and arrangement — of cities. The cities we build today are the great designs produced by our democratic society; the urban environment — the living and working environment of the whole urban population — is linked with the welfare of democratic institutions. Nearly every enterprise in which people engage, whether it is domestic or production and trade, is affected by and, in turn, shapes the design of cities. Real estate and finance, the social sciences and economics, the law, public administration and political science, architecture and building, engineering and the arts, all are woven into the physical pattern of the city."

A principle tenet of the book is that cities are growing ". . . less and less desirable as places in which to live and work. . ." The factors contributing to this state of affairs are analysed in detail, particularly as they influence the major problem of congestion, and some measures are proposed for the control of density and obsolescence within the framework of existing facilities. Although the complete practicability of the proposed measures is certainly open to debate, they nevertheless indicate a path well worth further exploration.

The book espouses no defeatist point of view. The authors are not advocating breakdown of the city nor a return to village size. It is granted that people need cities. The current flight to the suburbs indicates that "People are retreating from congestion, but they want and are retaining, the advantages of an urban environment. Despite the desirable characteristics of refuge in rural surroundings, the urban framework forms the basic employment pattern of our industrial society. The role of cities is more vital today than ever before. They provide the range and diversification of employment essential to a free existence of the people. Our task is not destruction of the city, it is to build a better one."

ILLUSTRATION TECHNIQUES

Illustrating For Tomorrow's Production. By J. Harold Farmer, Abbott J. Hoecker and Francis F. Vavrin. The Macmillan Co. (60 Fifth Ave., New York 11, N. Y.), 1950. 6 by 9¼ in. 203 pp. $5.00.

Translated into an architectural idiom, this manual comprises a handy guide for the preparation of simple presentation drawings and renderings intended for reproduction. The text, as written, deals specifically with industrial and mechanical illustrating, but the basic principles can be applied equally well to architectural work.

Material for the book was drawn chiefly from a series of production illustration courses which were taught by the authors under the auspices of the University of Texas War Training Program. The first section, dubbed the "kindergarten department," gives graphic short cuts for the various methods of projection — orthographic, isometric, oblique and perspective. Shades and shadows and freehand drawing are treated briefly.

The second half is concentrated on methods of making illustrations which reproduce well and economically, in printed form. The authors also give the fundamentals of the various reproduction processes, and comments on their uses. The concluding chapters deal with drawing for aircraft illustration, advertising, and industrial design. The entire text is clearly and concisely written, and is amplified with a wealth of illustrations.

SHOPS

The Specialty Shop. A Guide. By Jose A. Fernandez. Architectural Book Publishing Co., Inc. (112 West 46th St., New York 19, N. Y.), 1950. 8½ by 11 in. 304 pp., illus. $12.50.

Jose Fernandez, A.I.A., has compiled a guide to the specialty shop which will be useful to the architect as a summing-up in the field. In the foreword to the book Dean Leopold Arnaud says that it offers a resume of what has been done in the store field to date as well as indicates what is going to be done in the future. He further states that it should be of great help both to the prospective store builder and architect. The book points out the advantages of having an architect doing a job, and establishes a certain basis for rapport between architect and builder.

A combination of ideal conditions (funds, location, talented store architect) seldom occurs, admits Mr. Fernandez, and the best thing to do is to make the best use of less than ideal conditions. He has presented stores that accomplish just this, showing ex-

(Continued on page 30)

INSULATED METAL WALLS

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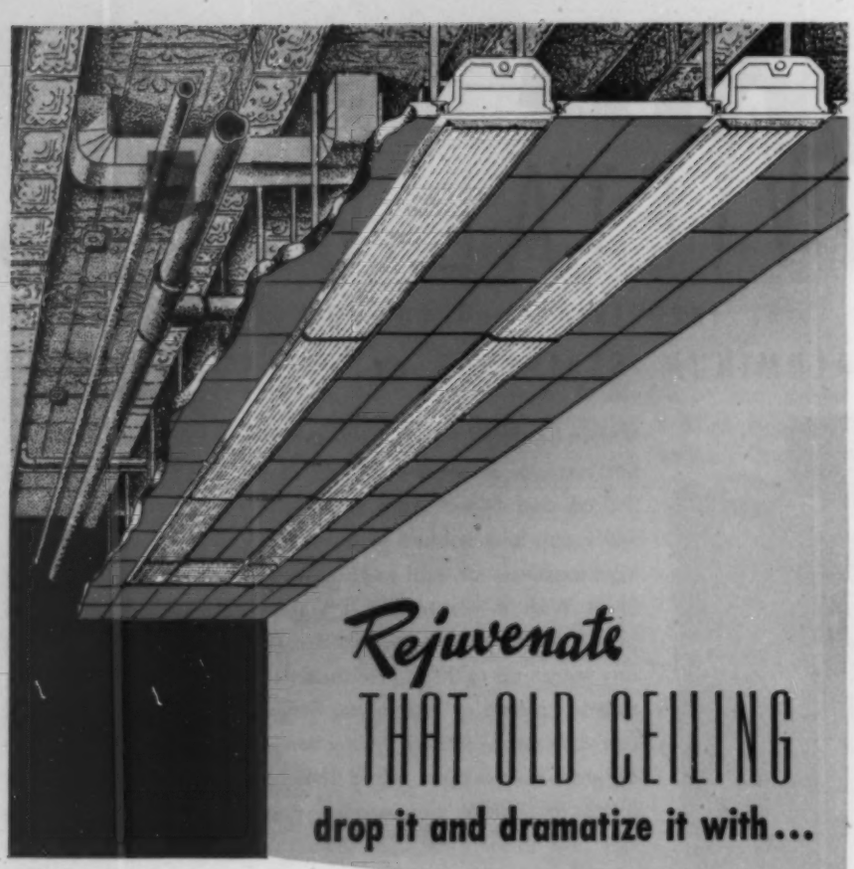
MAHON



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REQUIRED READING

(*Continued from page 28*)

amples of many contemporary stores, certain features of which make each worthwhile.

Usual topics in a book such as this are dealt with: the architect's problems, the store front, sign, awnings, interiors layout, staircases, lighting, color, display, salon and little types of shops, concealed functions and all the rest. The treatment presentation is direct; the author wastes no words, his text purposely being minimized in order to permit maximum space for pictures, plans and details. The specialty shops vary from the modest to the ultra-swanky, yet nearly every time the emphasis has been placed on the functions of each: what it is selling, and how best this has been accomplished. Among the last 50 pages are miscellaneous drawings including scale details taken from examples previously cited in the text.

LETTERS AND ART

Lettering. The History and Technique of Lettering as Design. By Alexander Nesbitt. Prentice-Hall, Inc. (70 Fifth Ave., New York, N. Y.), 1950. 7⅞ by 10⅝ in. xvii + 300 pp., illus. $6.00.

In an artistic field so familiar that often its nuances evade the even sensitive eye, Alexander Nesbitt's general reader is initiated to a concept of lettering that transcends "skill." Sometimes we tend to think "neat lettering," noticing a few lines at the bottom of a drawing, but it is not often that we consider a lettering job as part of an artistic presentation as a whole, whether it is from an architect's plan or a book's page. The author has considered lettering from the first as an intrinsic part of graphic design and not merely a necessity of but second-rate artistic value.

In Part I (The History of Letters) Mr. Nesbitt adds up the contributions to letters by prehistoric, Greek, Roman, Gothic, Humanistic times to the present, showing carry-over of influences and developments.

The second part of the book (A Practical Course in Lettering) is concerned with instruction alone. The techniques and methods given in the text are illustrated by full page plates which carefully designate such details as strokes, holding the pen or brush or pencil, etc. "Lettering with the Broad Pen," "Built Up Letters," "Exercises in Script," "Problems of Integration" and "Poster Design" are the chapters of Part II.

(*Continued on page 32*)

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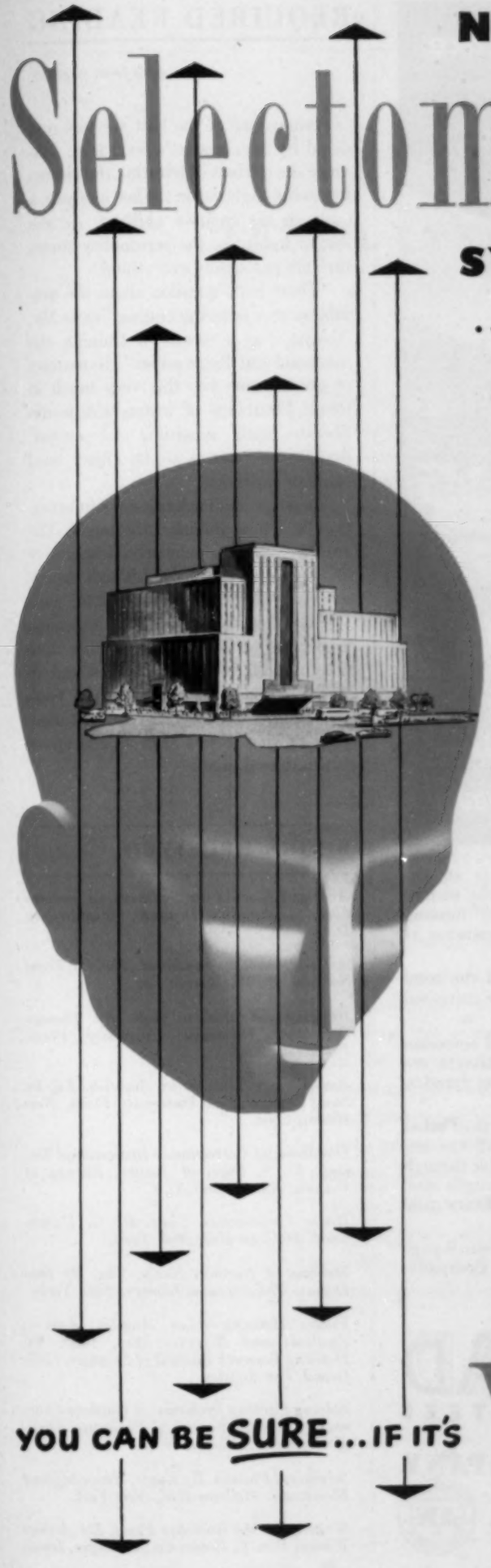

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REQUIRED READING

(*Continued from page 30*)

Perhaps one of the best services rendered by Mr. Nesbitt's book is to convince the student of lettering that learning technique is *not*, in the last analysis, a curb on his creative abilities. As the author indicates, the personality comes through practically everything.

"There is no question about the usefulness of a lettering course," says Mr. Nesbitt, "as a means of training the eye, hand and design sense." His manner of presentation has this very much in mind. Flexibility of instruction is deliberate and, according to author, permits the course to be either used alone or expanded.

The scope and background of information is extraordinarily thorough. The entire project is scholarly, instructive and well put together. Although experienced architects may have little need for schooling in this field, the beginning student will find the volume more than helpful both in defining styles and in giving instruction. For both, the book will be of interest from the historical point of view as well as in its concept of lettering as design.

BOOKS RECEIVED

Annual Report of the Smithsonian Institution. Smithsonian Institute, Washington, D. C.

Architecture of the Southwest, The. By Trent Sanford. W. W. Morton Co.

Building for Modern Man. By Thomas Creighton. Princeton University Press, Princeton, N. J.

Evolutionary Thought in America. Ed. by Stow Persons. Yale University Press, New Haven, Conn.

Handbook of Correctional Institutional Design. U. S. Dept. of Justice, Bureau of Prisons, Washington, D. C.

House Construction Costs. By G. Underwood. McGraw-Hill, New York.

Mosaics of Norman Sicily, The. By Otto Demus. Philosophical Library, New York.

Public Housing — Los Angeles Area — Analysis and Report — May, 1950. By Housing Research Council of Southern California, Los Angeles.

Solving Parking Problems. A Guide to Community Action. Bureau of Planning, Dept. of Commerce, Albany, N. Y.

Structural Plastics. By Engle, Hemming and Merriman. McGraw-Hill, New York.

Writing for the Business Press. By Arthur Wimer. Wm. C. Brown Co., Dubuque, Iowa.

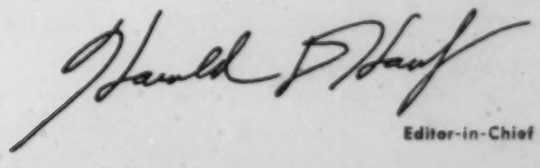
CITY PLANNING AND CIVIL DEFENSE

For the first time since the Middle Ages, weapons of war are again a paramount influence in the planning and building of cities. The walls of Carcassonne and Paris were counter-measures for archery, pikemen and catapults, and they imposed definite influences on the pattern of life within the cities. Today urban dispersal appears to be the only fully effective means of minimizing the effects of atomic bombing, but if we are alert to the implications, we can identify this means of defense with measures for making our cities better places in which to work and live. The growing congestion and concentration in urban areas is no more desirable in peace time than in war.

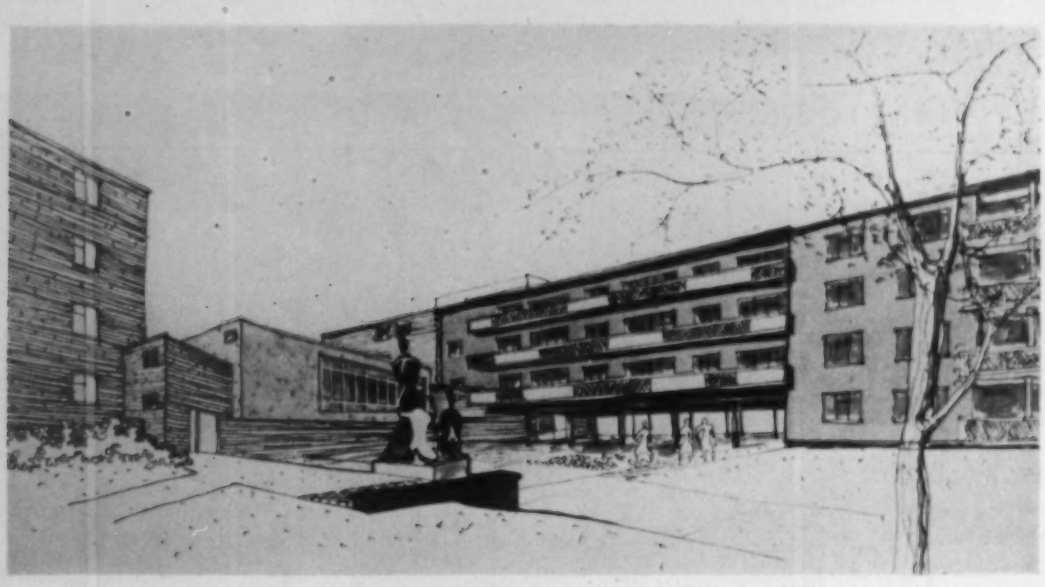
The cold war (which is no longer so very cold) presents two broad possibilities. It may develop into a major conflict within a relatively short period, or it may continue in substantially its present form for many years to come. This uncertainty calls for a two-pronged civil defense program. In every community, the first effort should be aimed at establishing an organization immediately to function in event of disaster. This would embrace measures for control of panic, designation of shelter areas, evacuation, clearing of roads, rescue, fire-fighting, and decontamination of areas which have become contaminated with radioactivity. The second calls for implementing urban dispersal as a defense and war-preventive measure, since reducing the concentration of industrial facilities and population makes atomic bombardment strategically less profitable, and renders the target less tempting.

Actual accomplishment of urban dispersal is feasible, as is clearly demonstrated by the construction program under way for the New Towns in Great Britain described in this issue of Architectural Record. This factual evidence together with the continuing threat of atomic bombardment presents an opportunity for promoting appreciation of the dispersal concept at all levels of municipal, state and federal planning. Architects and members of all the design professions are in a position to advance acceptance of dispersal planning by serving on civil defense commissions, housing authorities and similar related bodies.

Every slum clearance project, housing development, industrial plant, traffic artery or other public improvement should be planned with a view to the military as well as the civil aspects of dispersal. This will not be difficult, since the basic criteria controlling each approach point so nearly in the same direction.



Editor-in-Chief



BRITAIN

Above, design for apartments in Area 2, Mark Hall North, Harlow New Town (Fry, Drew & Partner, Architects); below, construction progress in this area

Photoflight, Ltd.

BUILDS HER NEW TOWNS

By Michael Rosenauer, F.R.I.B.A., A.I.A.

In the London region eight New Towns are now in process of development; there may soon be ten. Elsewhere in England, Scotland and Wales six are under way and more are starting. Some are completely new, others are expansions — whatever their nature, in magnitude the British New Towns program far exceeds any recorded attempt at producing a planned living and working environment for man. Furthermore, New Towns, no longer dreams, are actually being built. Such conscious planning for decentralization of congested areas, as we point out elsewhere in this issue, has not merely a social impetus; it is, soberly and ironically, an urgent military consideration.

THE NEED to change undesirable conditions in overcrowded cities has challenged our ingenuity for years. Leaving aside half measures, only two major ideas for preventing further damage from uncontrolled growth are so far discernible: the Green Belt idea, which limits the city sprawl geographically; and the idea of directing decentralization to new, organically balanced satellites. Green Belts were proposed as far away and long ago as Vienna at the turn of the century. It took all the experience of housing, garden cities, and the reorganization made possible by the bombing of London to lead to an effective method of decentralization — the British New Towns idea. To translate this idea into fact, to make it plausible to the public and to parliamentary parties, required detailed study, substantial publicity (for which conditions were opportune) and considerable work at the legislative and political levels as well as in land planning and architectural circles.

The London County Council published in 1943 Forshaw and Abercrombie's *County of London Plan*. In 1944 this was followed by the *Greater London Plan*.[1] To summarize this unique report, it proposed organizing the territory within a radius of approximately 50 miles in four concentric rings:

1. The Inner Ring. With an admissible population of 75 to 100 persons per acre, this area requires decentralization of 415,000 persons.

2. The Suburban Ring. Within an approximate radius of 12 miles, the overcrowding of this area could be adjusted within the ring itself. It could be considered static in regard to total population, though not in regard to the regrouping inside it needed to maintain a desired maximum density of 50 persons per acre.

3. The Green Belt Ring. Here many communities, old and new, exist; but neither any expansion of existing communities nor any new centers should be permitted.

(*Continued on page 104*)

[1] *The* County of London Plan *established the fact that the County's population was too dense. The Ministry of Town & Country Planning commissioned Sir Patrick Abercrombie to extend the studies in the* Greater London Plan.

THE DEVELOPMENT CORPORATION OF HARLOW NEW TOWN

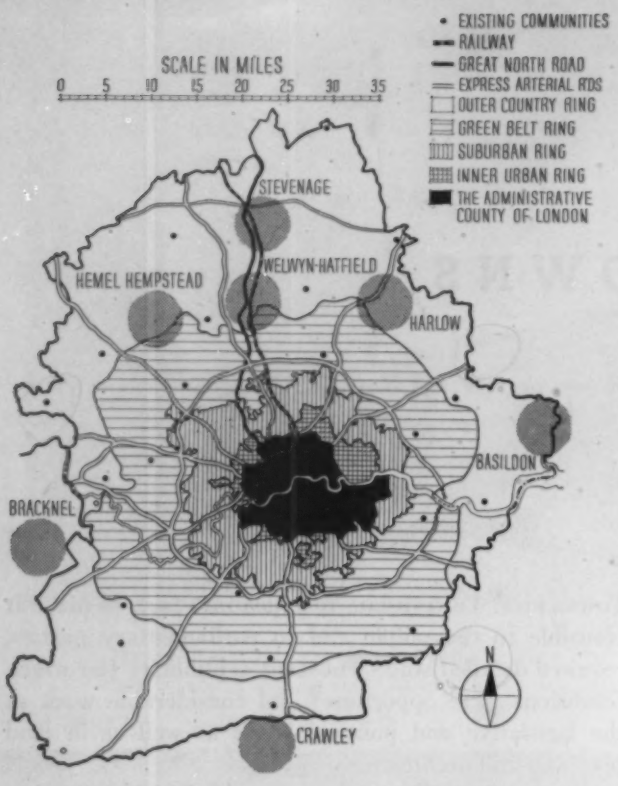
Chairman, Deputy Chairman and six Members

General Manager
with personal secretariat (5) including Public Relations Officer

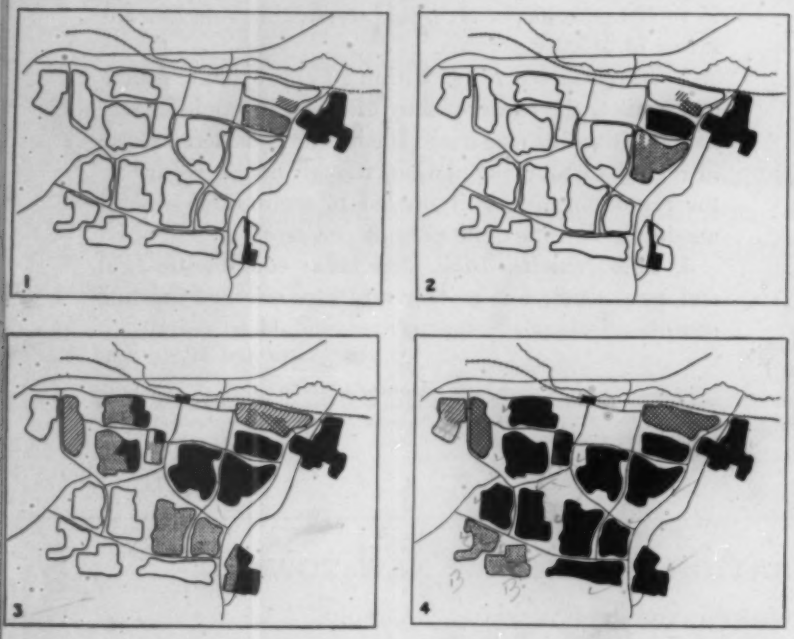
Deputy General Manager and Chief Finance Officer
with staff (10) dealing with general administration

Architect Planner, with an Executive Chief Architect assisted by professional and other staff including Clerks of the Works (21)	**Chief Engineer,** with a Deputy and professional and other staff including Clerks of the Works (26)	**Chief Estates Officer,** with professional and other staff including Landscape Manager (9)	**Chief Solicitor** with professional, other staff (4)	**Chief Finance Officer & Deputy General Manager,** with professional and other staff (8)

HARLOW NEW TOWN: AN EXAMPLE

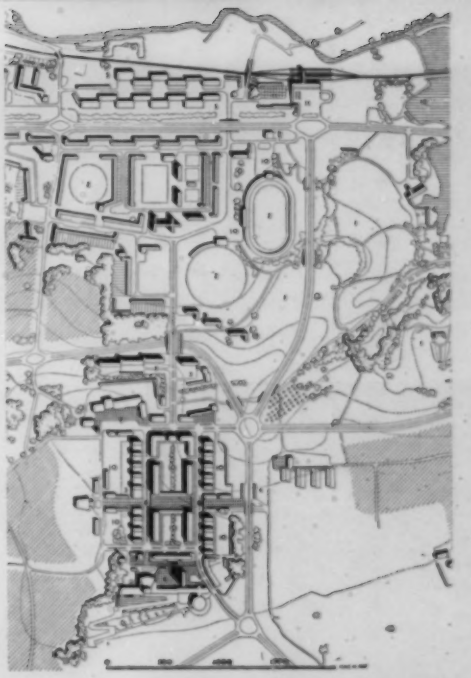


Above, entire Greater London region (County of London solid black) showing existing communities and New Towns. Below, progress plans showing manner in which, in about 20 years, Harlow New Town is to be completed



Left, plan of Mark Hall North, first residential portion of Harlow New Town to be completed, in which buildings designed by three independent architectural firms are now being erected

Master plan, Harlow New Town. Diagonally lined areas are for industry, where the Corporation is now building 11 factories; and four industrialists are developing sites. Area 2 is Mark Hall



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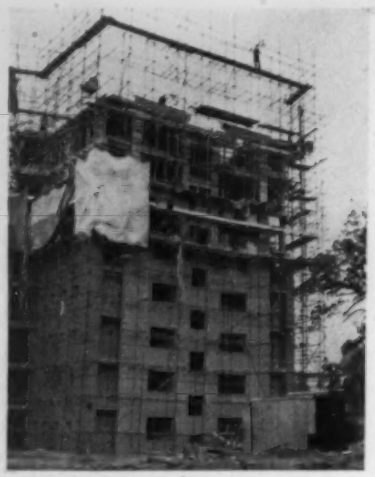
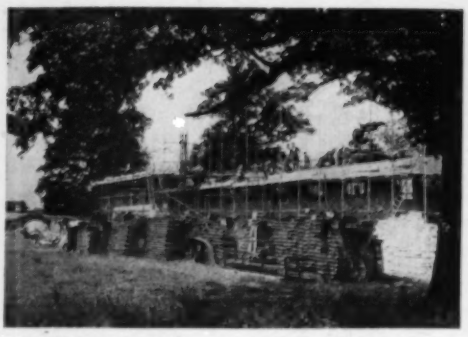
In master plan, left, residential areas 1 through 13, separated by green belts and major roads, are clustered around schools and commercial facilities. Air view immediately above shows site of Town Center; plan above that, proposed Civic Center, commercial structures, sports and cultural facilities, parks, etc. for this site. Below, left, "Terlings," existing mansion housing the Development Corporation, to be preserved; right, typical thatched cottage, Old Harlow

BRITAIN'S NEW TOWNS

Right, air view of Mark Hall section, Harlow New Town; circle, upper left, indicates site of 10-story apartment shown below, left, in model; right, as of October 1950 (Frederick Gibberd, Architect). Lower right, three-story apartments, Mark Hall North

Photoflight Ltd. Photo





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4. The Outer Country Ring. The *Greater London Plan* recommends this ring, with an outer radius averaging 50 miles, as the chief reception area for overcrowded central London. For this Outer Country Ring, predominantly rural, the New Towns are proposed.

Organized Decentralization

People cannot be ordered to leave their places of residence, but they can be induced to move by offering them better surroundings together with prospects for work close by. Realization of this led to the idea of combining new residential communities and new industrial developments. Dormitory suburbs, a half measure, cause commuting traffic whose ensuing problems defeat the actual aim of decentralization. Daily travel to and from work has reached the limit of transport capacity and has taxed to the limit those who do it.

People will be reluctant to move if moving means complete segregation from relatives and friends. Therefore the New Towns are at a minimum distance from London; as close as the Green Belt permits. When the New Towns are completed and their 60,000 to 80,000 populations are fully provided for, educational, cultural and entertainment places will exist in each New Town itself. But in the first years of development, the possibility of reaching facilities of the parent city without a long journey will strongly affect the decision of city residents to move.

The pressing need for adequate accommodations for the overflow from central London speeded the New Towns Act, which the then Minister of Town & Country Planning, Lewis Silkin (now Lord Silkin), successfully carried to Parliament in 1946, politically backed by an all-party vote. Eight New Towns are now in process of creation in the Outer Country Ring of London, most of them beyond the planning stage.

ORGANIZATION

In order to build a New Town, the Minister of Town & Country Planning appoints, after consultation with existing local authorities in the designated area and its environs, a Development Corporation with a Chairman and a Deputy Chairman. The Corporation, reconstituted every two or three years, consists of a few members selected by the Minister on the basis of special qualifications. They are paid — part-time — and the Corporation's Board functions in a manner similar to any authoritative committee, but delegates much authority to a General Manager (see organization chart).

Distribution of Powers

The New Towns Act sets forth the aims and powers of a Development Corporation as follows: "*The objects of a Development Corporation established for purposes of a new town shall be to secure the laying out and development of the new town in accordance with the provisions of this Act and for that purpose every such Corporation shall have the power to acquire, hold, manage and dispose of land and other property, to carry out building and other operations, to provide water, electricity, gas, sewerage and other services, to carry on any business or undertaking in or for the purposes of the new town; and generally to do anything necessary or expedient for the purposes of the new town or for purposes incidental thereto: provided that, subject to the provisions of this Act with respect to the making of*

Left to right, top row: Lord Silkin, Minister of Town & Country Planning until 1950; Rt. Hon. Mr. Dalton, present Minister; Dame Evelyn Sharp, D.B.E., Deputy Sec'y, MOTCP; Sir Ernest Gowers, G.B.E., K.C.B., first Chairman, Harlow Dev. Corp.; R. R. Costain, C.B.E., F.I.O.B., present Chairman. Second row: W. Eric Adams, O.B.E., Gen. Mgr., Harlow New Town; R. T. Kennedy, Chief Planning Officer, MOTCP; Frederick Gibberd, F.R.I.B.A., A.M.P.T.I., Architect Planner, Harlow; Maxwell Fry, F.R.I.B.A., and his partner, Jane Drew, F.R.I.B.A., architects of one portion of Mark Hall North. Bottom, Design Unit (Harlow Dev. Corp.), architects of another portion; B. G. K. Allsop, J.P., M.C., F.R.I.C.S., F.A.I., realtor and member, Harlow Dev. Corp.; Oswald E. Parratt, F.R.I.C.S., Quantity Surveyor, Harlow; F.R.S. Yorke, A.R.I.B.A., one of the architects of Mark Hall South

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advances to Development Corporations, a Development Corporation shall not have power to borrow money."

A Corporation cannot incur capital expenditure without the approval of the Minister and, through him, the Treasury. The extent to which this provision is employed to exercise detailed control rests in large measure with the Minister. For certain routine items of capital expenditure, he may give general authorization in his approval of the Corporation's annual budget; for others he may wish to exercise detailed control. Once formulated, the Corporation's proposals need the consent of the Town Planning Authority. Local authorities concerned have the right to consult with the Minister before he approves, with or without modification, the Corporation's proposals.

The opportunity of producing tangible results of such magnitude has inspired all those connected with the building of the New Towns, from draftsman to general manager of the Development Corporation and civil servants in the Ministry, to hard, persevering work.[2] There does not appear to be any serious error in organization, although continuing experience may disclose the advisability of making minor adjustments in allocation of powers or in other matters. Once capital outlay is started, it is in the Government's interest that the revenue-producing phase be reached without delay.

HARLOW NEW TOWN: AN EXAMPLE

The location of Harlow New Town is one of those suggested by Sir Patrick Abercrombie in the *Greater London Plan*. It lies on high ground, above the River Stort in rural Essex, on the main railroad and highway between London and Cambridge. Abercrombie based his choice on a number of promising features, of which one is the short distance to the overcrowded East End industrial areas of London. The land is pleasantly undulating and, in part, of very good farming quality, with two parks at Parndon Hall and Mark Hall as attractive recreational features. Not far away is Epping Forest, one of the most beautiful woodlands in the Green Belt zone.

The Master Plan

The master plan of Harlow was developed by Frederick Gibberd as Chief Architect-Planner, in close cooperation with the Development Corporation and its General Manager, W. Eric Adams. Sir Ernest Gowers, first Chairman of Harlow Development Corporation, regarded the master plan as not being "a plan of the town" but the "plan of the framework to which it is proposed the town should conform" leaving room for additional ideas and a wide variety of treatment. The Corporation submitted the plan to the Ministry of Town & Country Planning in July, 1948; it was approved by Lord Silkin in March, 1949 — the first New Town plan to obtain approval.

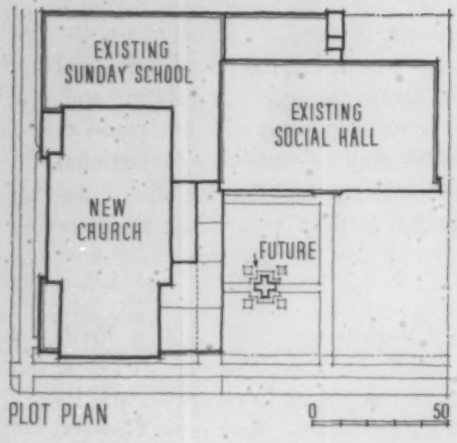
Mr. Gibberd describes his primary aims as having been "to organize the town in distinct areas for work, home and play; to connect these areas by a road pattern in which traffic can flow easily; and to surround the whole area by a well-defined agricultural belt." He was concerned to capture the characteristics of an historically grown town, those qualities of urbanity which, in his opinion, arise from the architecture of the buildings

(*Continued on page 190*)

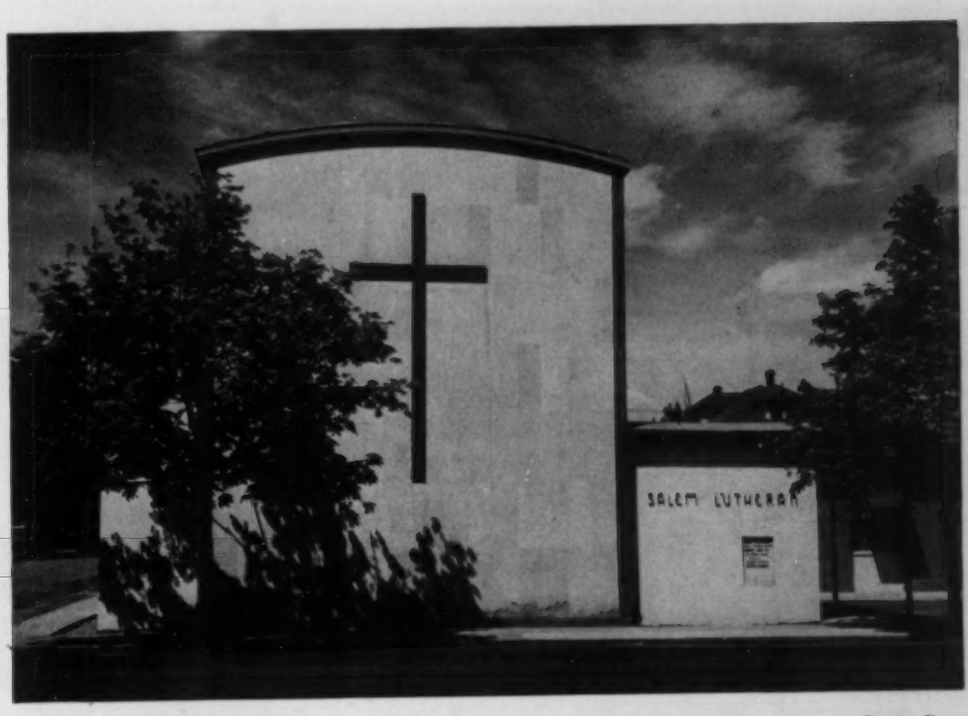
[2] *As in America, there are in England those who continue to deprecate planning even as it approaches realization; and advocates of expedient housing solutions who do not appear to comprehend that new housing will exist in the New Towns. — Editor*

SALEM LUTHERAN CHURCH, SPOKANE, WASH.

E. J. Peterson, Architect



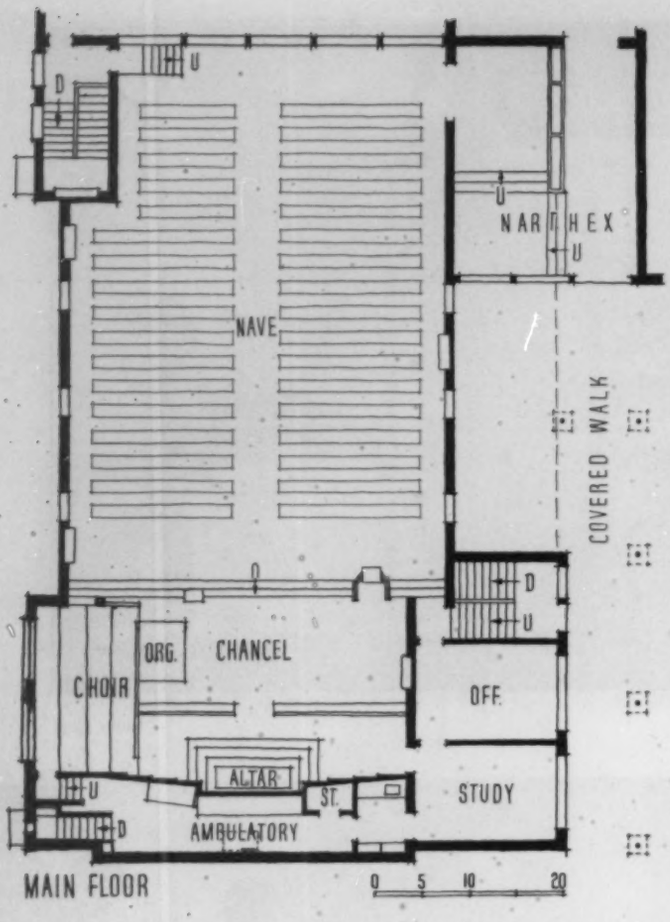
ORIGINALLY built in 1899, Salem Church was destroyed by fire in 1949 at the time that a new social hall (labeled "existing" on the accompanying plot plan) was being constructed. The social hall and existing Sunday School classrooms escaped damage. The new building had to be designed not only to meet the congregation's requirements; it also had to harmonize with the remaining structures and, if possible, provide improved facilities on the limited (120 by 150 ft) site. Below, at left, is shown the accepted design, of which everything but the chime tower ("future" on plot plan) has been completed. In the new scheme, a larger nave was provided; Sunday School rooms were added in the Church basement; the entrance was relocated closer to the center of all activities.



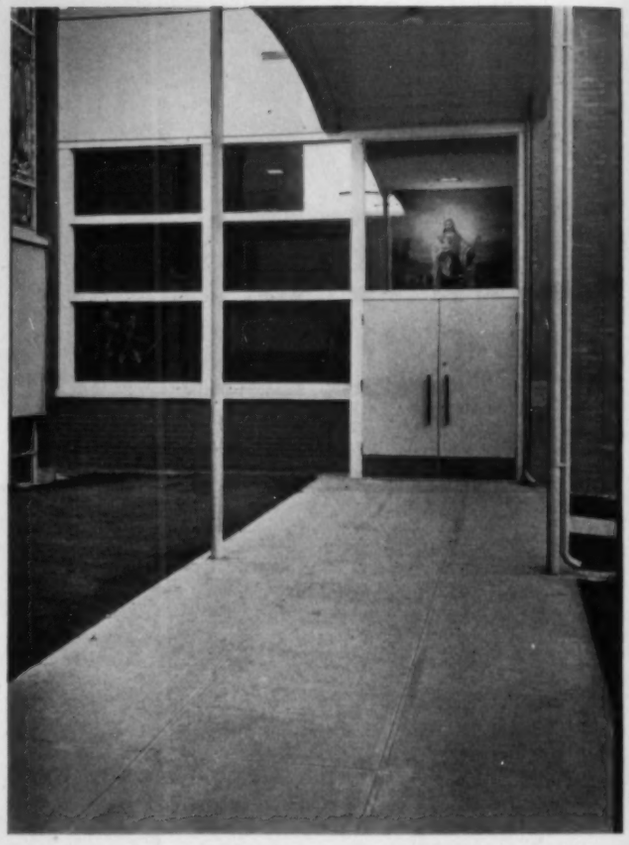
Christian Photo

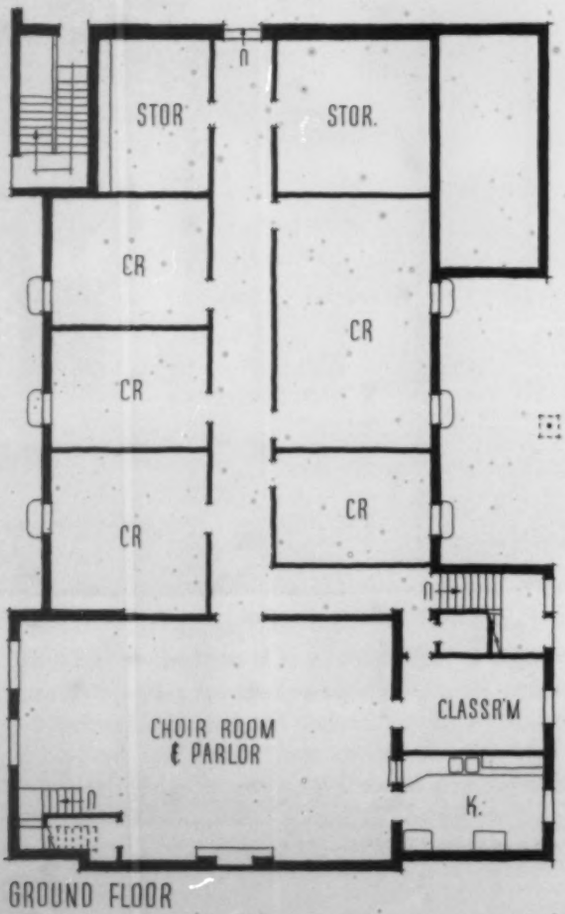
Roscoe Laing Photo

Salem Church is the oldest Lutheran congregation in Spokane. Many of its members are of Swedish extraction; perhaps in their racial origin lies the reason why the members, voting down traditional Gothic architecture, voiced a preference for contemporary design. The formalistic freedom thus granted greatly simplified the architect's work; for instance, the entire scheme was improved by building the new chancel at the South end of the nave (it had been at the North) and relocating the entrance. To emphasize the now secluded narthex and to provide shelter, a covered entrance walk is provided. Stained glass windows were salvaged from the old building

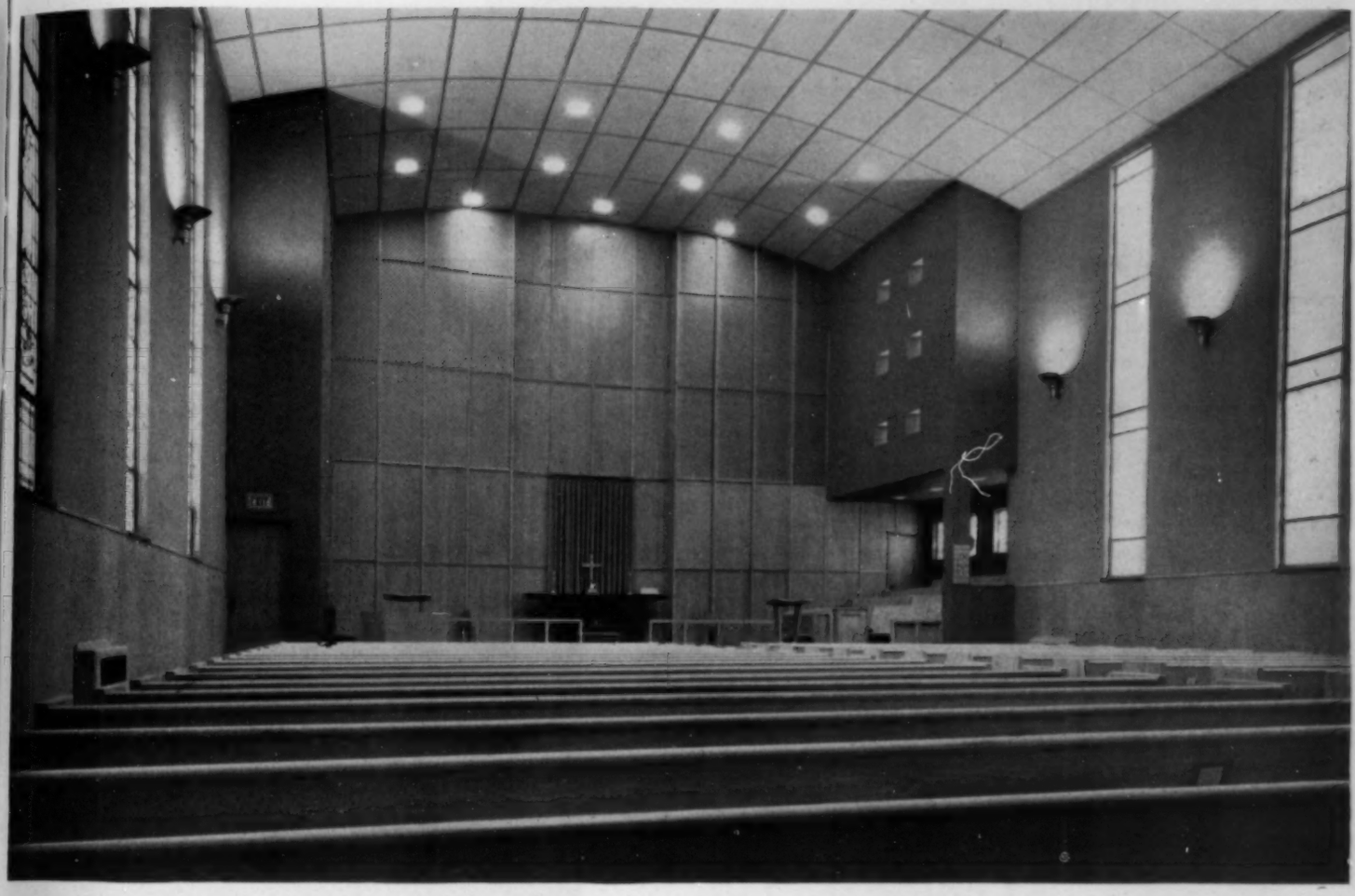


Key to problem was reversing the nave. Chancel, formerly at North end (top of plan) was placed at South, close to sidewalk. From new narthex church is directly accessible up steps; down ramp is entrance to Social Hall and Sunday School rooms (see photo, right), under altar painting salvaged from old church





Behind the chancel are an ambulatory and, above that, the organ loft. Clerestory walls at chancel have glass block inserts, ceiling has recessed down lights and accent spots, all coordinated in design to heighten the relatively simple Lutheran ritual



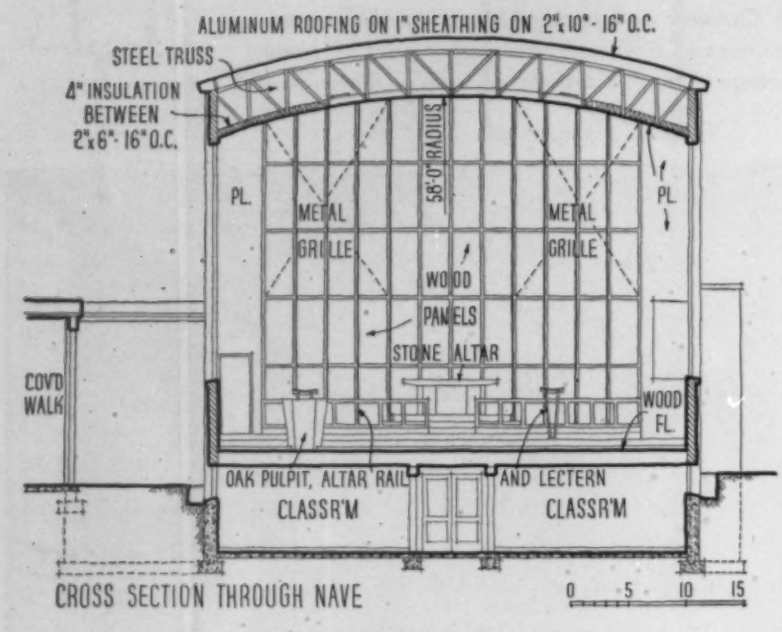
Roscoe Laing Photos

In Design Salem Church is quite appropriate for a Lutheran congregation. It makes no pretenses; it is friendly despite its unconventional plan and interior color scheme, in which lavender walls and ceiling are complemented by bleached oak pews and green carpeting. Its architectural significance cannot be overlooked. Many a congregation or Board of Deacons has voted for one of the traditional styles of architecture, heedless of what such an emotional decision may do to the functioning of the building in relation to ritual, to the congregation's particular requirements, to such temporal matters as the practical relationships between the parts of the church compound; and with little reasoned thought about architectural expression of religious faith.

By 1948, Salem Lutheran Church had outgrown its modest beginnings. Its congregation had grown to 600, which necessitated two crowded services per Sunday. Its Sunday School was overcrowded; the basement Social Room couldn't begin to handle crowds at increasingly popular Smorgasbord dinners, where as many as 1500 had to be served in one evening. So it was decided to build a new Social Room and, after that, to remodel the Church basement to provide more Sunday School rooms. The nave was then to be extended to the North.

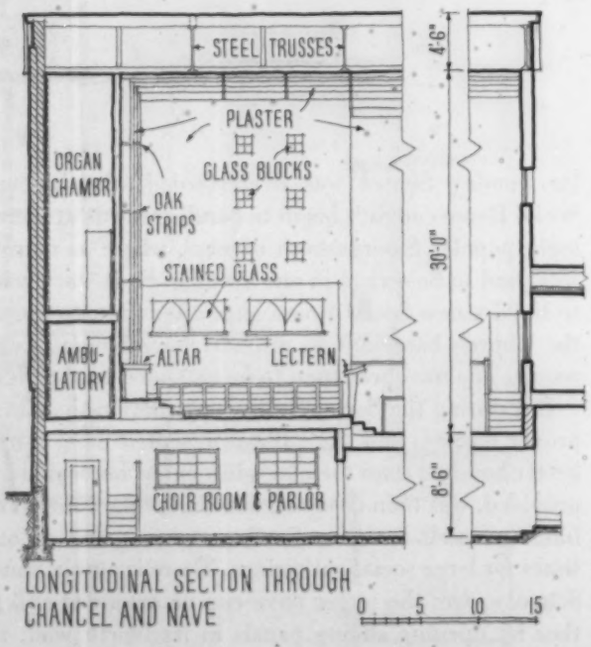
But during the Social Hall's construction the Church proper burned, and the edifice presented here, a much better building than the makeshift extension would have provided, was then designed and built. The Church now functions well both for Sunday services and at other times for large social gatherings. There is ample Sunday School space; the larger nave can be extended still further by opening sliding panels in its North wall, thus converting adjacent Sunday School rooms into a balcony for overflow seating; and all elements can be reached easily from the centrally located entrance.

SALEM LUTHERAN CHURCH



CROSS SECTION THROUGH NAVE

Construction is quite conventional: concrete foundations, 12-in. brick bearing walls, steel roof trusses supporting wood-framed construction and embossed aluminum surfacing. South wall of nave has Indiana limestone facing; elsewhere, exterior is dark red brick with dark blue trim. Inside, nave has oak floor on wood framing; basement, asphalt tile on concrete; narthex, stone.

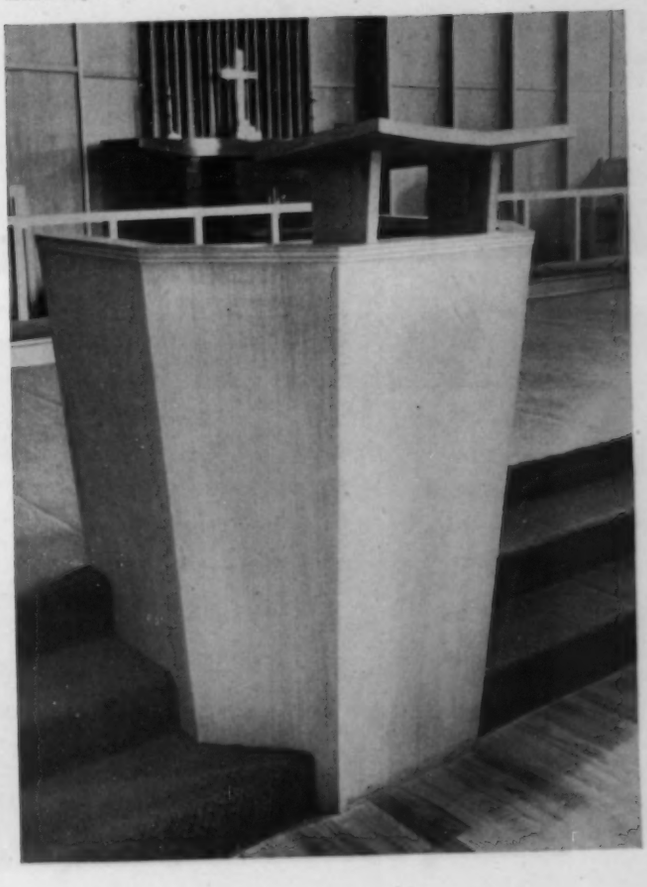


LONGITUDINAL SECTION THROUGH CHANCEL AND NAVE

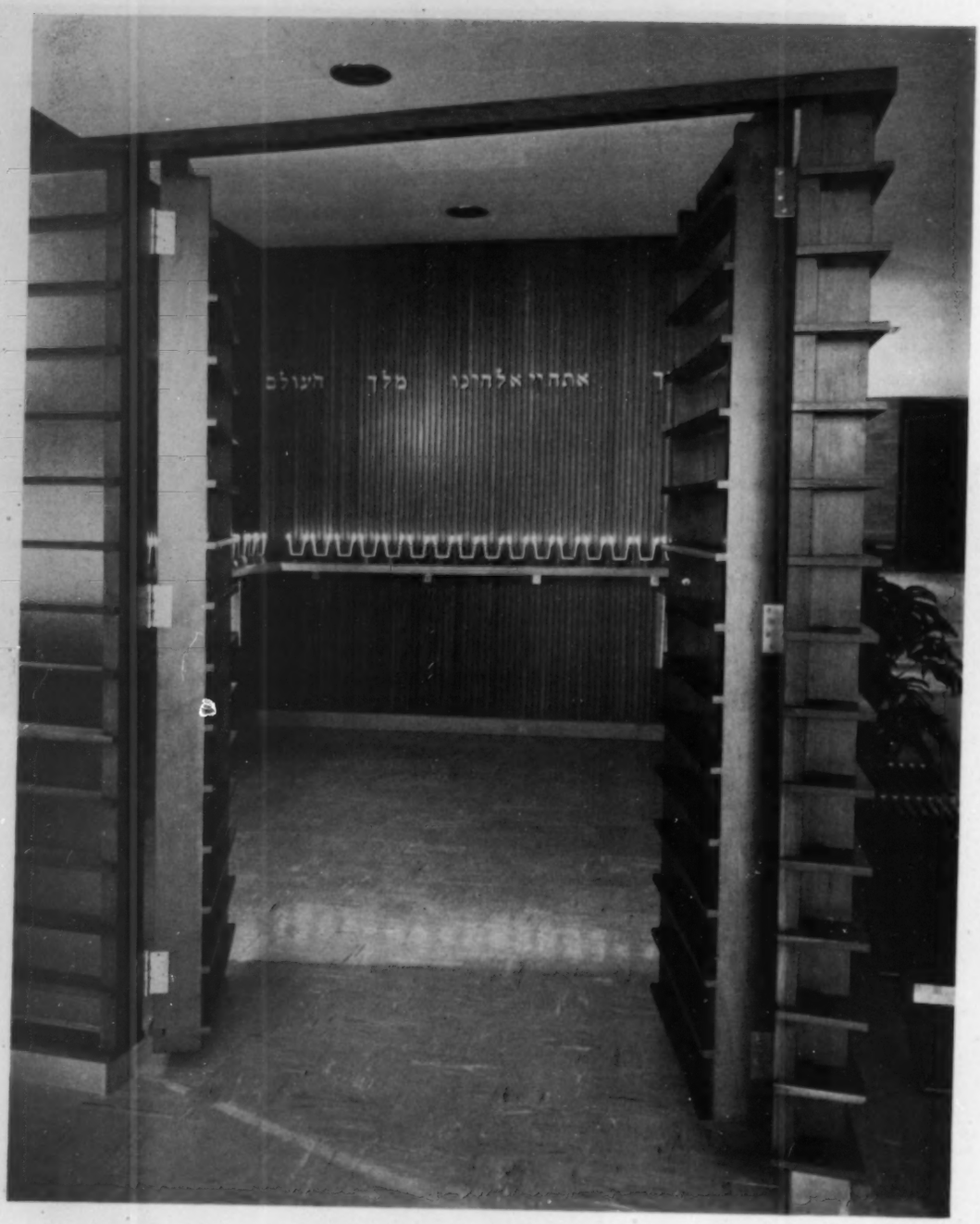
Christian Photo

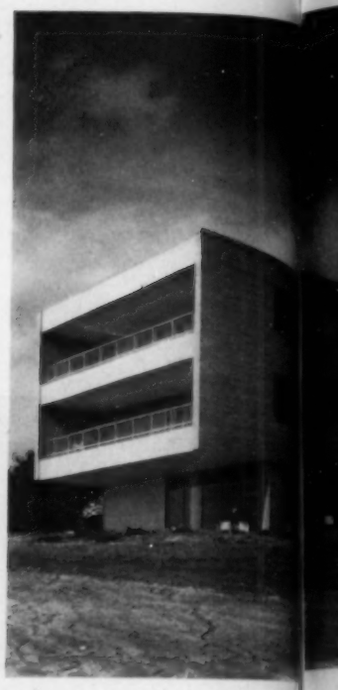
Behind two bronze grills in chancel (above) are organ pipe chambers. Woodwork throughout nave is bleached oak, with ceiling and side walls painted light lavender, chancel walls dark lavender, green carpeting on floor. Upper right photo shows choir stalls with, behind them, leaded glass windows from the old church; lectern and black marble baptismal font are new. Altar (right), also from old church, is likewise black marble. Far right, new pulpit.

Roscoe Laing Photos



L. D. Jones Photos





Devotional heart of the Home is the chapel with its adjacent candle room (above). Chapel seats 100. Continuous casements are glazed with obscure glass and provide for installation of stained glass panels on inside at later date

HOME FOR THE JEWISH AGED

Kansas City, Missouri

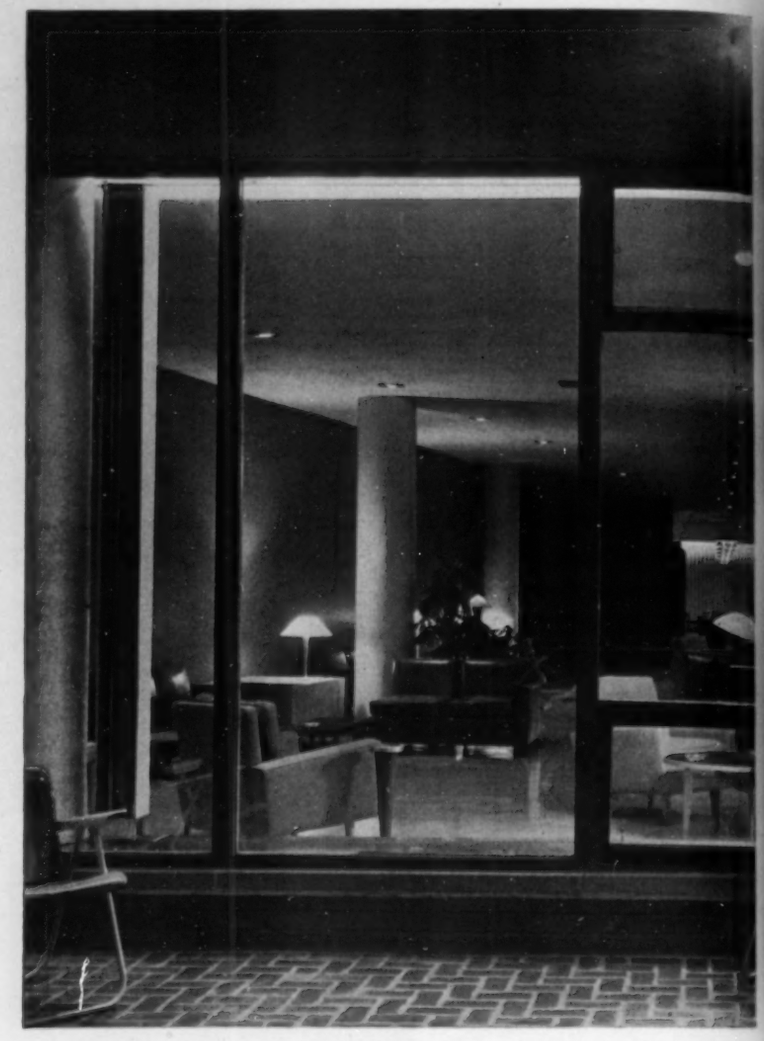
Kivett and Myers, Architects

IN DESIGNING this building the architects had one chief thought in mind: provision of complete institutional facilities in pleasant, informal surroundings with the least possible institutional atmosphere.

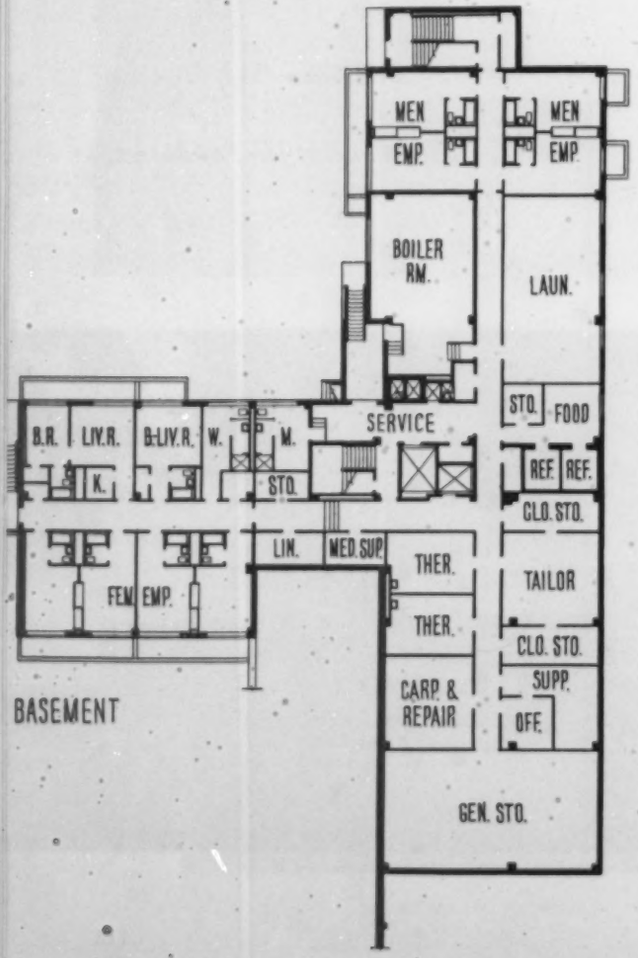
All the basic institutional facilities — sleeping, eating, recreational, medical and religious — have been provided, but the atmosphere is definitely that of a residence club. The building accommodates 76 regular residents in double rooms, attractively furnished and each with its own toilet. The dining room is airy and spacious, furnished with tables for four; two separate kitchens provide for religious diet requirements. Lounge and recreational areas are generous: in addition to the main lounge on the ground floor there is a lounge on each of the other floors, plus balconies, roof deck, occupational therapy shops, and library. An infirmary wing accommodates eight patients in four double rooms, plus laboratories, examination rooms and physical therapy rooms. A chapel and adjoining candle room provide for the religious needs of the Home.

The building is one unit of the proposed Medical Center on the grounds of Menorah Hospital. It has been planned for expansion both horizontally and vertically — with horizontal extensions of both northeast and northwest wings, and addition of two floors.

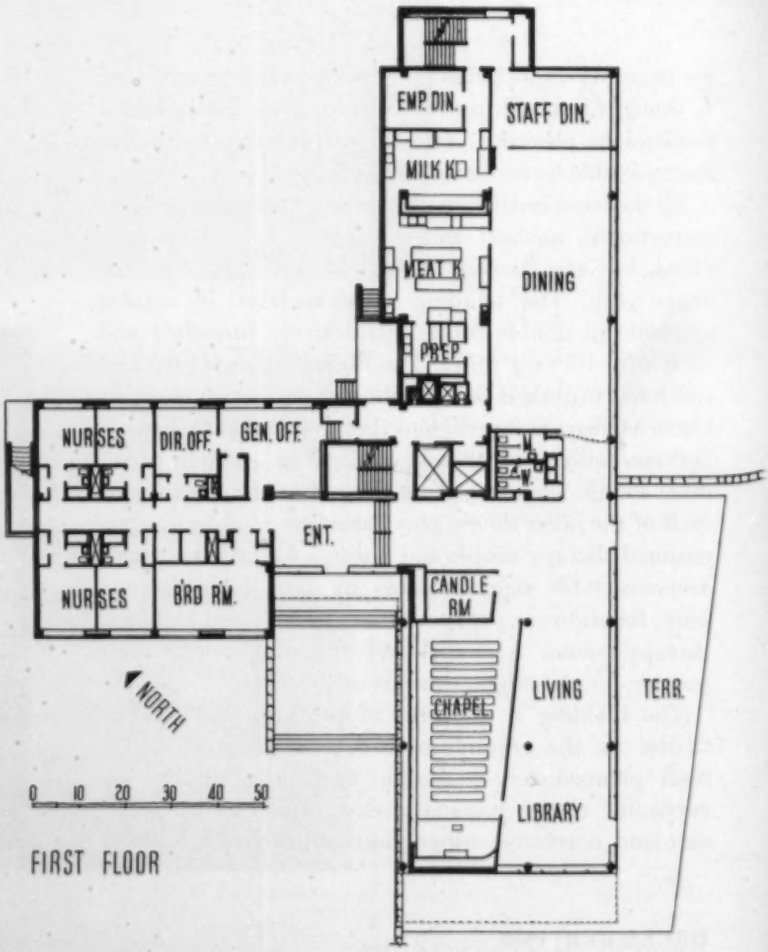
L. D. Jones Photos



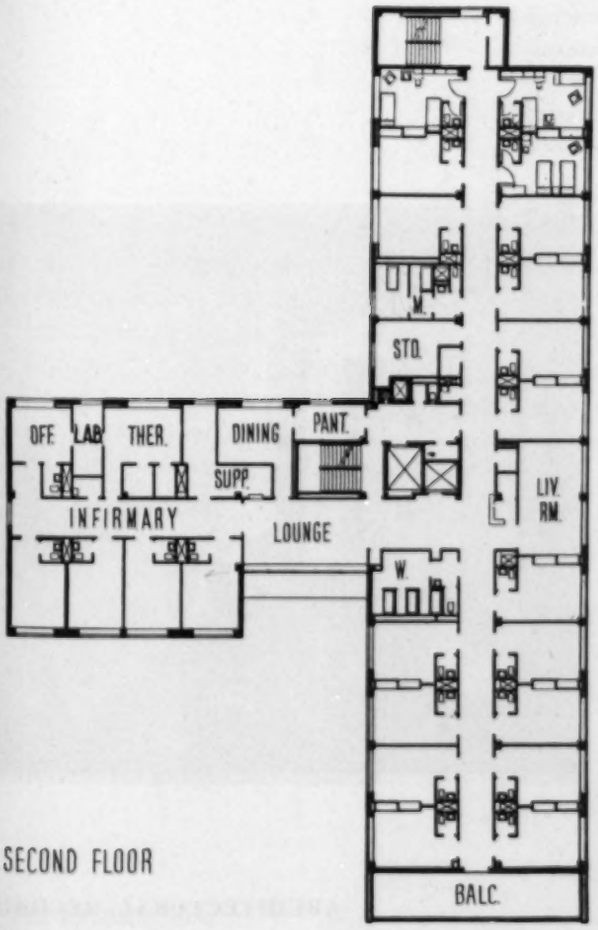
Exterior is brick, backed by masonry blocks on a reinforced concrete frame. Main entrance (above) leads directly to information desk at front of open general office. Main lounge (right) can be extended for special functions by opening up of main and staff dining rooms. Lobby (opposite page) has walnut plywood walls, linoleum floors, acoustic tile ceilings



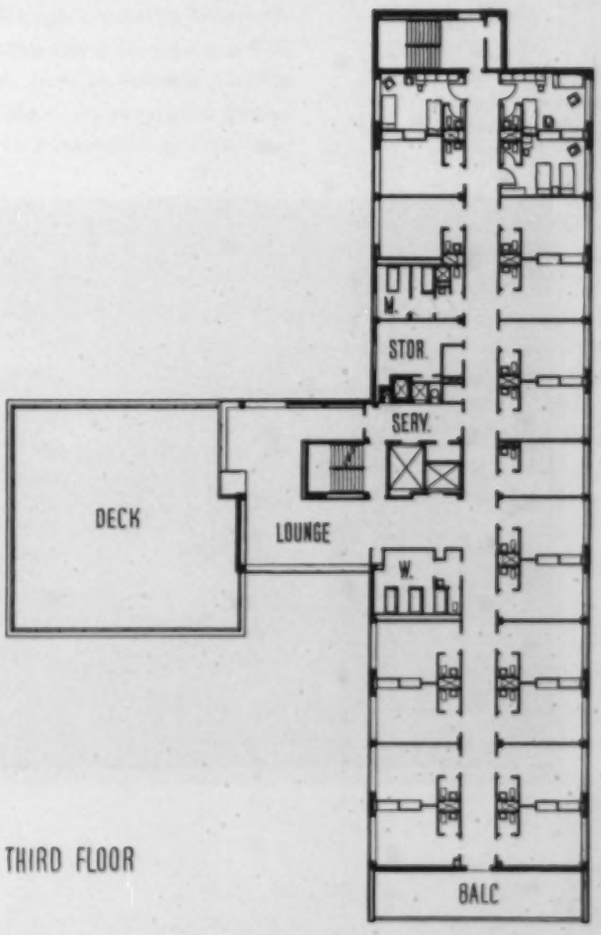
BASEMENT



FIRST FLOOR



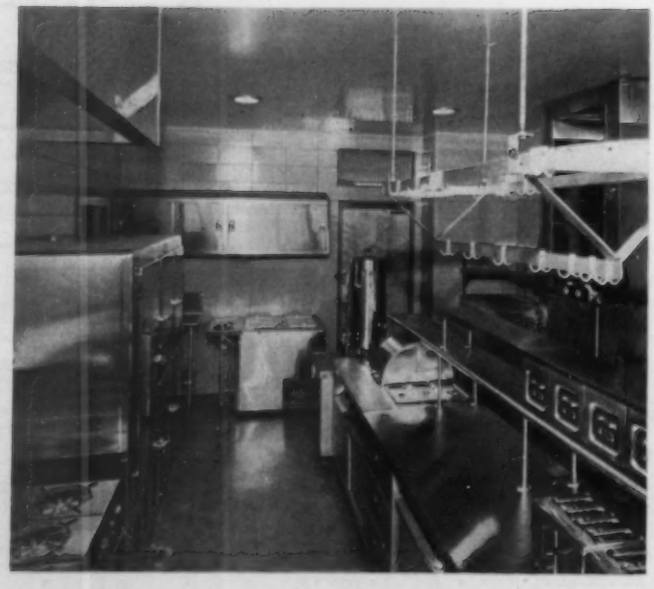
SECOND FLOOR



THIRD FLOOR

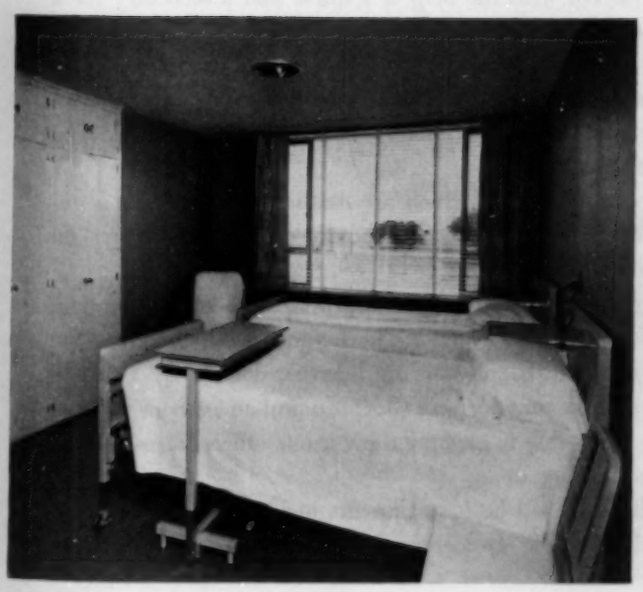
Dining room (right), is light and airy, attractively furnished. Folding wood partition separates staff dining area from rest of room. Tiled lavatory for ritualistic washing of hands before meals (above) is conveniently placed between main lounge and dining room

L. D. Jones Photos



Each of two upper floors has its own lounge. That on third floor (below) has direct access to deck

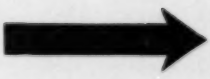
Bedrooms (opposite page) are double, have walls covered with washable fabric. Furnishings include built-in wardrobe, movable dressers, writing desks and lounge chairs. Infirmary wing (below) is well-equipped for examination and treatment



ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 169

MEDICAL OFFICE BUILDINGS

Open the fold for equipment legend for floor plans



EQUIPMENT LEGEND

1. Lavatory with mirror over
2. Foot lever waste can
3. Examining light
4. Examining table
5. Waste paper basket
6. Instrument & supply cabinet
7. Straight chair
8. Adjustable stool
9. Easy chair
10. Bookcase
11. Executive desk & chair
12. Secretary's desk & chair
13. Filing cabinets (lettersize)
14. Floor lamp
15. Occasional table
16. Clinical scale
17. Hookstrip
18. Umbrella stand
19. Sectional settee
20. Counter with cabinets below (open below where stool, item 8 is shown)
21. Sink with gooseneck spout
22. Wall cabinets
23. Pressure sterilizer, 8″ x 16″
24. Refrigerator
25. Basal metabolism apparatus
26. Couch (examination—treatment—recovery)
27. Mirror
28. Electrocardiograph
29. Fluoroscope
30. Film illuminator
31. Folding screen
32. Charting desk, counter height
33. Electrosurgical unit
34. Table lamp
35. Water closet
36. Wallhung shelf
37. Specimen passbox
38. Dressing table and mirror
39. Portable operating light
40. Mayo instrument table
41. Built-in counter
42. Pressure sterilizer, 10″ x 20″
43. Instrument sterilizer, 4″ x 6″ x 16″
44. Operating table
45. Baby scale
46. Toy cabinet
47. Table and chairs (child size)
48. Baby examining table
49. Specialist's cabinet, with suction pump & compressed air
50. Specialist's chair
51. Audiometer
52. Cuspidor with service connections
53. Accessory table
54. Woods light
55. Couch (psychiatrist)
56. Superficial X-ray therapy unit
57. X-ray control unit
58. Leaded glass view window
59. Treatment and examination chair-table
60. Ultra-violet light
61. Reading light
62. Eye operating light
63. Lens case on cabinet
64. Greens' refractor
65. Vertometer
66. Binocular ophthalmoscope
67. Chin rest
68. Slit lamp
69. Keratometer
70. Vision chart
71. Tangent screen
72. Perimeter
73. Troposcope or synoptophore
74. Arm chair
75. Storage cabinet (4′6″ high)
76. Writing table & chair
77. Urological X-ray table
78. Irrigator unit
79. Film washing tank with film illuminator above
80. Movable lead-lined screen
81. Water sterilizer
82. Chemical instrument sterilizer
83. 3-compartment developing tank, timer and safe light above
84. Loading counter with film storage bin below
85. Loading counter, cabinets below, safe light and film rack above
86. Film storage bin
87. Film dryer
88. Cassette pass box
89. Towel bar
90. Stereoscope
91. Proctoscopic examining table
92. Wall hung bookcase
93. Radiographic & fluoroscopic combination unit
94. Cassette changer
95. Barium sink in counter, cabinet below and recessed cabinet above
96. X-ray therapy unit
97. Lead-lined door (light proof)
98. Lead lining
99. Seat
100. Film filing cabinets
101. Pressure sterilizer, 16″ x 24″
102. Hot air sterilizer, 18″ x 14″ x 14″
103. Drainboard with peg-board above
104. Incubator, 12″ x 15″ x 10½″
105. Serological water bath (6 rack)
106. Paraffin oven, 12″ x 12″ x 10″
107. Laboratory table
108. Galvanic unit
109. Infra red lamp
110. Plaster cart
111. Wheel chair
112. Whirlpool bath
113. Paraffin bath
114. Treatment table
115. Diathermy short wave unit
116. Stall bars
117. Shoulder wheel
118. Lavatory with plaster trap
119. Instrument and supply cabinet with suction apparatus
120. Pulley weights
121. Light-proof door

PHYSICIANS' OFFICES

Prepared under the general direction of JOHN W. CRONIN, M.D., F.A.C.S. Chief, Division of Hospital Facilities United States Public Health Service Federal Security Agency

PHYSICIANS' OFFICES have been rather a blind spot in the literature of building planning. The Public Health Service has had continual requests for up-to-date information on arrangement, layout and equipment of offices for various medical specialties, as have architectural publications. Accordingly Marshall Shaffer assigned to his staff of architects in the U. S. Public Health Service the task of studying doctors' offices and preparing this series of check-list plans. The following plans and text were prepared by Peter Pfisterer of that staff.

Exact requirements were ascertained through consultations with practicing physicians, their assistants and nurses. These were tried out in sketch form in further contacts and correspondence, and finally are here released in finished form. Advice and criticism of preliminary schemes were obtained from The American Medical Association, The Medical Society of the District of Columbia, the staff of Public Health Service dispensaries and health units, and the manufacturers and distributors of surgical and medical equipment.

It is obviously impossible to propose dogmatic standards which will be universally applicable. The purpose of these plans is merely to demonstrate graphically the fundamental needs for space and equipment, possible traffic solutions, and suggested relation of rooms and areas. The assembled information is therefore to be regarded primarily as guide material or reference check-list, and will have to be adapted in each instance to individual conditions, personal taste, work habits and type of practice.

The material illustrates specific requirements of 13 different specialties of medical practice. In order to provide a uniform basis for comparison, it was necessary to bring all suggested suites to a common denominator. Therefore these assumptions are made:

1. The suites are intended as one-man offices, that is, each layout is designed for use by only one practicing physician with the help of a nurse and a secretary (or a combination of both), and other professional assistants as the case may be.

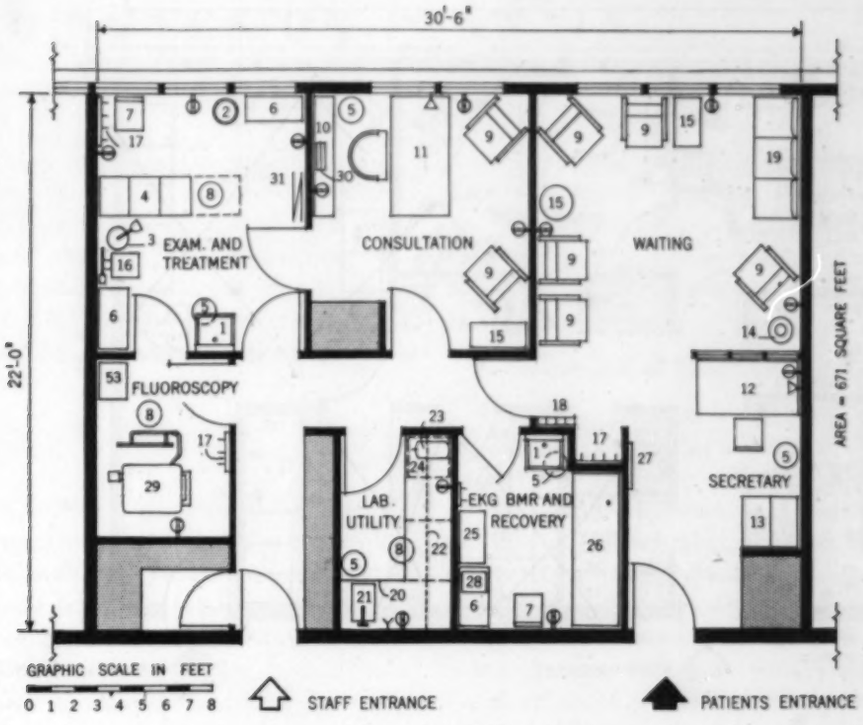
2. Each suite is assumed to be complete in itself and should contain all necessary features for the particular specialty involved. The only facilities shared by all occupants consist of building entrance and lobby, stairs and elevators, corridors, and centrally located public toilets.

3. The aim is to provide accommodations which are neither luxurious nor absolute minimum, but rather incorporate all essentials comfortably with an eye on maximum efficiency and economy in floor area.

4. For the purpose of integrating all suites into a professional office building, a standard bay width of 22 ft has been assumed. The layouts have therefore the shape of rectangles with constant width and varying lengths, defined by two end partitions 22 ft long (left and right), a corridor wall (bottom) and an exterior window wall (top). This system makes it possible to arrange the various offices in rows along one or both sides of a common corridor.

An equipment legend for all plans will be found on the inside of the flap of this page. When opened out the legend will appear conveniently beside plans on all succeeding pages.

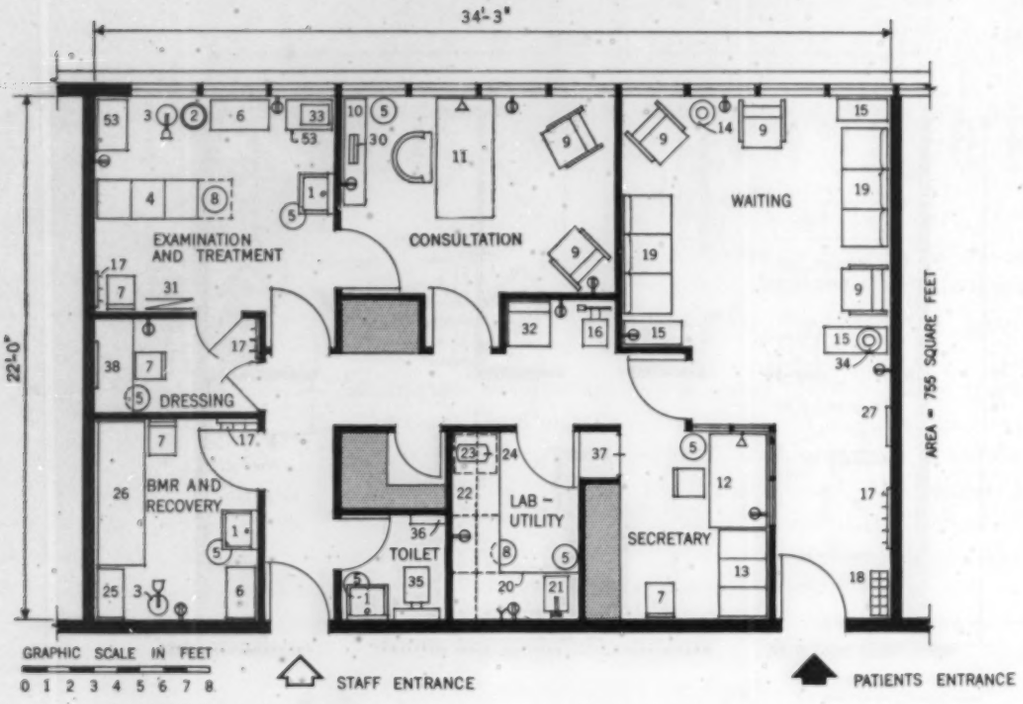
Previously published in pamphlet form by the American Surgical Trade Association



GENERAL PRACTICE

THE schematic layout illustrated here has been tailored roughly to what might be termed the basic needs of the average physician who concentrates primarily on internal medicine. However, by incorporating but slight modifications and certain substitutions of equipment, the design of this suite may well be adaptable to the requirements of the general practitioner or of physicians specializing in different medical branches such as glandular, circulatory, nutritional diseases, etc. Due to the fact that office therapy is ordinarily limited to comparatively simple procedures, the main emphasis is placed on facilities for diagnostic examinations. The extent and completeness of these vary, but few physicians in this group can do without a fluoroscope, B.M.R., and E.K.G. equipment and at least a small routine laboratory. Because fluoroscopic examinations have to be performed in complete darkness, it is best to provide a separate inside room, eliminating the inconvenience of light-proofing and darkening the examining room each time the fluoroscope is used. It should, however, be immediately adjacent to and communicating with the examining room, so that it is accessible to partially clothed patients.

Inasmuch as the basal metabolism tests are usually performed by the nurse in the early part of the morning, it would be wise to design the B.M.R. room also for other functions during regular office hours. For example, it may be used for electrocardiograms, diathermy, injections, etc., and for a variety of relatively simple examinations whenever the main examining room is occupied. Also the laboratory may frequently become a multi-purpose room. In the absence of a utility room or space, it could incorporate some utility equipment, and besides the customary laboratory facilities (sink, Bunsen burner, microscope, etc.), it may contain provisions for developing E.K.G.'s; a refrigerator for vaccines, and the like. In case a toilet room within the suite is considered necessary, the storage closet to the left of the staff entrance can easily be converted for that purpose.



OBSTETRICS AND GYNECOLOGY

ALTHOUGH these two specialties are often practiced separately, they have been grouped together for the purpose of this study because the physical requirements appear to be almost identical for both. Perhaps the least controversial aspect on the list of design elements for this suite is the almost unanimous demand for a comfortable dressing room, a toilet and a multi-purpose recovery room. There seems to be little doubt that at least one dressing room off the examining room (with or without direct access from corridor), containing dressing table, mirror, chair and robe hooks, represents a good investment. The toilet room within the office limits is in this case a necessity from a medical point of view. Similarly as in other suites, the recovery room is not only needed for recuperation but also for injections, anesthesia tests, B.M.R.'s, etc. It may be of interest to mention that the planner can spare the patient some embarrassment by such small details as a convenient provision for the unobtrusive depositing of urine specimens on a shelf or cabinet between secretary's office and laboratory-utility room. These two spaces, together with the scale and charting desk recess, form the nucleus of the work area, where the secretary or nurse identifies the patient on her way to the "inner sanctum," receives her specimen, prepares her records and records her weight. As illustrated by the plan, the design and location of this work area allows the secretary to maintain contact with entrance and waiting room, without loss of privacy on either side, even when occupied with a patient as described above.

GENERAL NOTES ON PLANNING

From the point of view of physical organization, the entity of a complete office suite can be divided into four main elements. These divisions consist of (1) Waiting Area, (2) Patients' Consultation — Examining — Treatment Areas, (3) Staff Work Area, and (4) Circulation. All are interrelated and should form a well integrated unit without infringing on each other's specific functions.

WAITING AREA

The primary requirement for the waiting room is a comfortable and relaxing atmosphere, undisturbed by circulation of patients and nurses, yet in close proximity to the main entrance and secretary's headquarters. Good supervision and control from this point is essential for giving directions to arriving and departing patients as well as for calling them to consultation and examining areas. If space permits, an outside location of the waiting room is of course preferred, as it presents better opportunities for achieving an informal, pleasant and inviting space arrangement. Concerning size and seating capacity, no hard and fast rules can be established, since extent of practice and appointment systems vary considerably with each individual physician. Needless to say, in addition to the familiar easy chairs and magazine tables, some provision should be made in or near each waiting room for hanging coats, hats, umbrellas, including a wall mirror near the entrance.

CONSULTATION — EXAMINING — TREATMENT AREAS

This section should form a well related series of rooms, each affording complete privacy, but readily accessible by physician and assistants passing from one to another. In some cases, communicating doors between adjoining rooms are indicated to facilitate circulation. This arrangement has, however, the disadvantage of disturbing privacy to some extent and of reducing wall and floor space usable for equipment. In all plans these communicating doors are therefore optional and can be either added or eliminated.

Consultation Room

With the possible exception of the dermatologist and the ophthalmologist, who usually combine the functions of consultation and examination in one room, every physician needs a separate private office. Although this room does not have to be very large in most cases, it should be attractively decorated and furnished, for psychological reasons, and it must afford complete privacy for conversations and interviews with patients and other callers. Standard furniture includes an office desk for personal belongings, a bookcase for professional reference books, and at least two or three comfortable chairs, since patients frequently appear with other family members or relatives. Generally, the preferred location for the consultation office is near the waiting room and in close proximity to the secretary's office, for the convenience of staff and patients who often complete their visit in this area alone.

Examining and Treatment Rooms

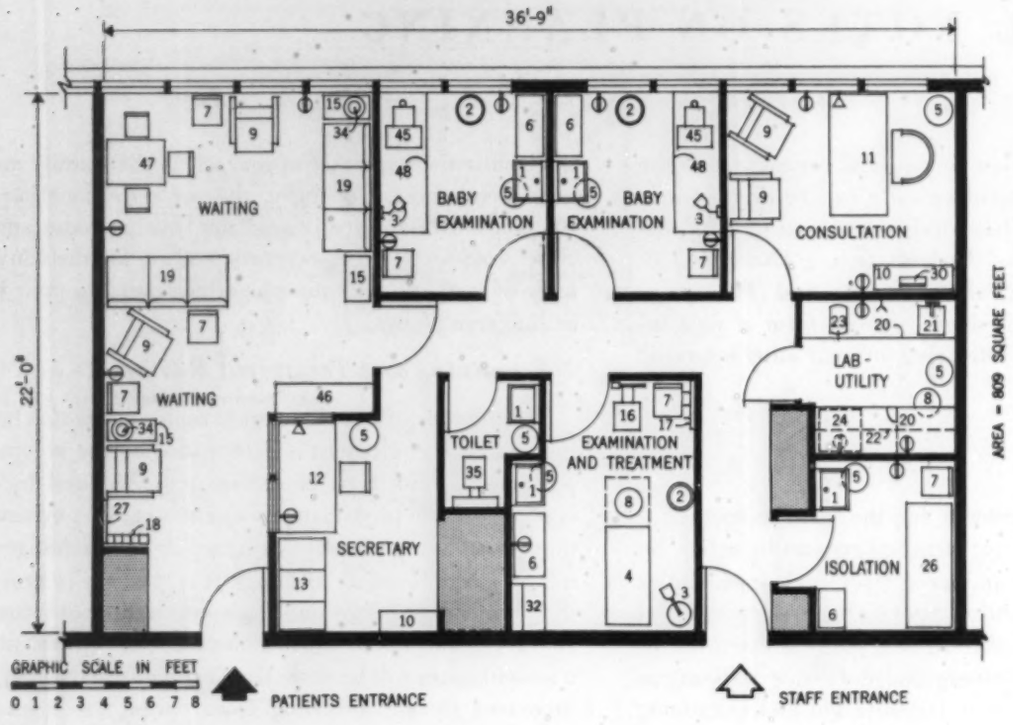
The number, size and layout of rooms under this heading and their equipment is determined by the volume of patients, by the type of service rendered and by the specialty of the physician. As a general rule, a minimum of two rooms, preferably designed for interchangeable use, is recommended. Although it is possible to practice in a suite containing only one examination-treatment room, the additional expense in rent and equipment for a second room will be more than compensated for by the increased income resulting from caring for a greater number of patients due to a substantial saving in time. While the physician is examining a patient in one room, another patient can undress and be prepared for examination or treatment by the nurse in the second room. In some instances treatments may be administered by an assistant at the same time the physician is occupied with a patient in another room.

Recovery Rooms

These rooms, where indicated, are designed to serve several purposes to justify their inclusion — for recuperation after local anesthesia or painful examination, for isolation, for specimen collecting, for injections, BMR's, diathermy and other minor but time consuming procedures often handled by a nurse; as an auxiliary examining room when other rooms are occupied. Many physicians feel that every office suite should be provided with one such multi-purpose room containing a couch or bed.

Dressing Facilities

Present controversy regarding dressing facilities (dressing rooms, cubicles, curtains, screens, etc.) seems to preclude an ideal standard solution. The majority of the interviewed physicians (except obstetricians and gynecologists) were of the opinion that patients could dress and undress in the examining room proper with only a chair, a folding screen and some clothes hooks provided. This method admittedly ties up the examining room longer than necessary for the examination. On the other hand, a dressing room or cubicle is no help in this respect either unless it has, also, a direct door to the corridor and is used alternately only by every second patient. However, such a dressing room with two doors presents rather obvious privacy and door locking problems. Moreover, some patients are hesitant to use any type of enclosed dressing space because they prefer not



PEDIATRICS

It seems that the pediatricians are divided into two main schools of thought as far as the method of examining babies is concerned. The proponents of the "cubicle school" advocate small open stalls containing only an examining counter with scale and a supply cabinet, whereas the extremists of the opposition insist on full-fledged examining rooms which, in addition, embody all the functions of the consultation room. Both sides have valid arguments in support of their theories, and no comparative merit evaluation is intended here. On the contrary, an attempt has been made to compromise between the two factions by combining certain features of both. Since babies usually constitute the bulk of the patient load, the cubicle idea has been adopted in a modified form. Two relatively small identical examining rooms are provided, which are large enough to accommodate, besides the specified items, a washbasin and a chair for the mother during the examination of her child. For older children a completely equipped examining and treatment room with small writing desk is shown to illustrate the principle of this combination. A separate consultation office, permitting a quiet interview with parents undisturbed by crying babies, is located as far away as possible from the noisy waiting room. The arrangement of this waiting area is equally the subject of different opinions. While it seems advantageous to divide it into sections for various age groups with some entertainment facilities suitable to each, many pediatricians feel that caution should be exercised not to turn the waiting space into a rumpus room. Although it is common office practice not to admit children with known disturbances of a contagious nature, not too infrequently infectious cases are nevertheless discovered in the waiting room. Such patients are then immediately segregated in a small isolation room where the diagnosis is confirmed and from where they can be dispatched home through a separate exit. Some pediatricians, however, employ different techniques and may prefer to use this space for fluoroscopy instead. It remains to be mentioned that age and physiology of the patients call for a toilet room within the suite easily and quickly accessible from waiting as well as examining rooms.

to leave their clothes and belongings out of sight. These considerations should be kept in mind in examining the few layouts where dressing rooms are indicated.

WORK AREAS

The staff work area includes such spaces as secretary's office, laboratory, utility room, charting desk, etc. Contrary to the facilities used by the patients, these elements are not grouped together in a continuous unit, but are strategically distributed within the suite to best serve the function for which they are designed.

Receptionist-Secretary Office

The office of the receptionist-secretary must be close to entrance and waiting room for control of arriving and departing patients, for making new appointments and discussing financial matters, and for directing waiting patients to consultation, examination, or treatment rooms. Yet this office should also be located conveniently to the doctor's work area for easy access to records and for supervision of traffic within the suite. Another reason for the desirability of this relation is the fact that, due to limitations in personnel, the nurse is frequently required to double as secretary and vice versa. The question of whether or not the secretary's office should be an enclosed room or simply an open bay off the waiting room or a compromise between the two arrangements is again a somewhat controversial issue. To illustrate these possibilities, several different schemes are shown on the plans. For average conditions, however, it seems that the problem is probably best solved by a partially enclosed space having a glass partition with a sliding or open window on the waiting room side and connecting without any separation (no door) to corridor of work area. In this way the main objection against an open bay, namely lack of privacy for both waiting patients and secretary, is overcome without sacrificing visibility and ease of control.

Utility Room — Laboratory

Some possibilities of handling the utility room and laboratory problem are likewise illustrated by several different examples. For many specialties laboratory and utility room functions can be combined, others require separate accommodations, while still others get along with nothing but an instrument sterilizer, storage cabinet and wash basin in the examining room itself. A fairly practical solution, saving floor space and nurses' steps consists in the concentration of utility and laboratory equipment (counters, storage cabinets, sink, refrigerator, sterilizer, microscope, etc.) in a centrally located nurse's workroom, equally accessible from all examining and treatment rooms. It may be said in this connection that sterilizers in the examining rooms are sometimes considered objectionable because of the steam within the room.

Scale and Charting Desk Recess

Another feature of the work area, applicable in certain offices, is the scale and charting desk recess. Appropriately located in a niche off the corridor, these items allow the nurse to record the weight of a patient without tying up a room, and to lay out all records of those patients expected during the day for the physicians' review and notations. The desk is high enough for writing in a standing position and contains separate racks and compartments for records to be consulted, to be processed or to be filed.

CIRCULATION

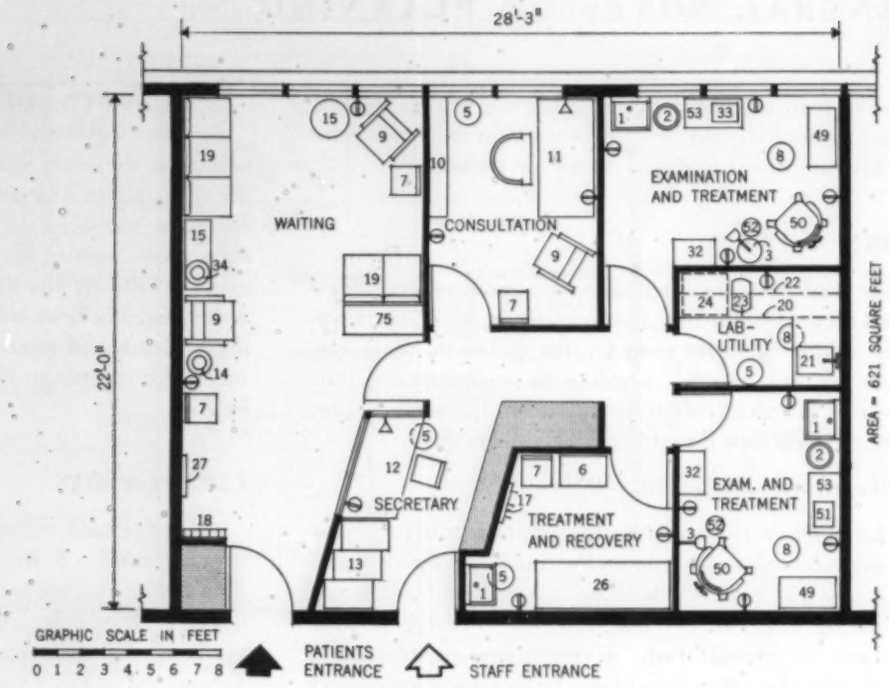
An important consideration in the design of a well organized office is the efficiency of the area allotted for circulation. During busy office hours it should permit an easy flow of traffic, avoiding confusion between incoming and outgoing patients, and affording undisturbed access and egress to and from work areas by both patients and staff. A separate entrance, allowing the physician to enter or leave the suite without passing through a waiting room, seems most desirable if not almost essential. This second entrance may also be used occasionally by patients wishing to avoid the waiting area, and for all commercial transactions such as deliveries of supplies, drugs, specimens, etc. The resulting corridor area, necessary to meet the described objectives, might by some be considered costly, unproductive floor space. But it seems hardly recommendable to sacrifice efficiency, convenience, comfort and privacy for a relatively small saving in office rent.

STORAGE

The individual needs and preferences for built-in storage facilities vary all the way from none at all to entire storage rooms. Here again we find the necessity of striking an economic balance between the rental expense of so-called unproductive floor space and convenience in operation for each particular instance. Obviously, no standard formula can be recommended, and the storage areas indicated on the plans (by dotted shading) represent, therefore, merely a possible average which can be amplified or reduced depending upon the analysis of each individual physician's requirements. The same consideration applies to the usage and interior arrangement of the different storage closets. No attempt has been made to indicate shelves, clothes poles, type of doors, etc., nor to designate the multitude of items to be stored, such as coats, uniforms, office supplies, instruments, medical equipment, etc.

TOILETS

Although many physicians may consider it desirable to include at least one toilet room within the limits of



OTORHINOLARYNGOLOGY

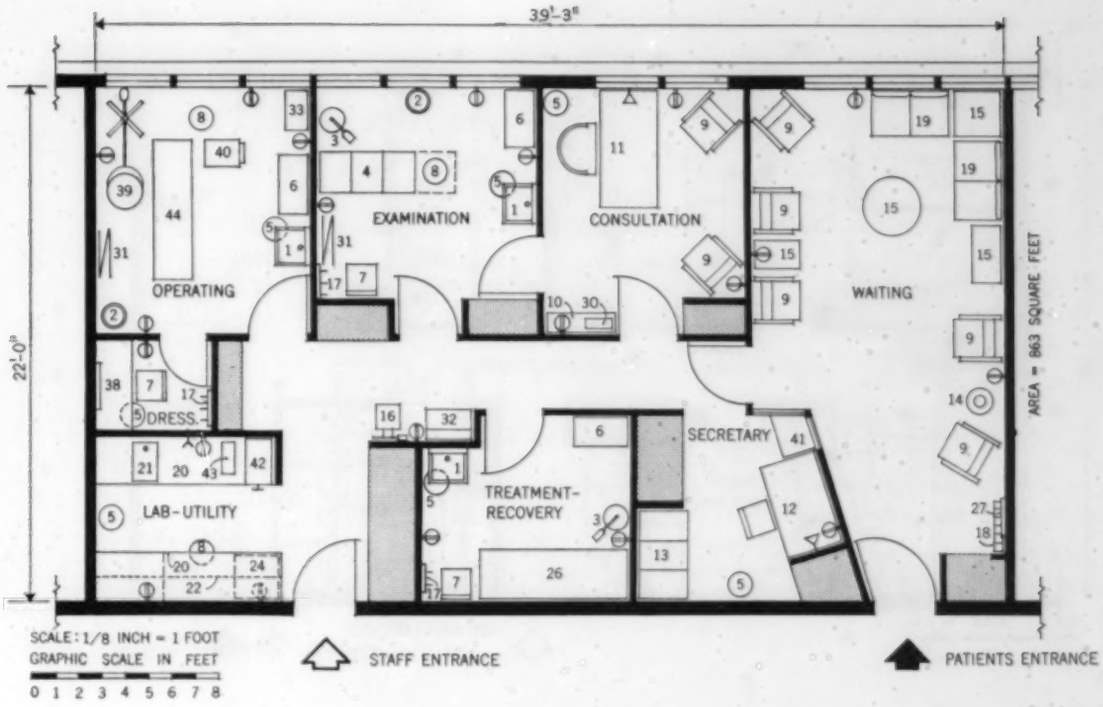
GENERAL NOTES ON PLANNING

every suite, toilet facilities have been shown only in those offices in which they are mandatory for the medical procedures of the respective specialty. It is, of course, assumed that public washrooms are available.

EQUIPMENT

While it is recognized that the final selection of each piece of equipment again depends upon the practice and training of the individual practitioner, it appears to be possible to crystallize certain basic requirements more or less corresponding to the average need. Wherever practicable, standard, movable furniture and equipment has been assumed, except in a few cases where a built-in desk, settee or counter seemed to offer substantial advantages or better utilization of floor space. Only major items which can easily be identified on the drawings have been included, and all small pieces, such as hand instruments, microscopes, typewriters, etc., were purposely omitted in order not to confuse the readability of the plans. *For identification purposes each plan symbol is provided with a number referring to the equipment legend on the first page, which, when folded out will be conveniently available for reference to each layout.* Generally speaking, the suites have been designed around the chosen equipment. In other words, the combination of furniture and equipment, logically selected and conveniently located to carry out the predetermined functions of a particular room or area, dictates the size, shape and arrangement of each such space. Those confronted with a planning problem may well remember not to reverse the process.

An efficient practice of otorhinolaryngology can generally be carried out in a space somewhat smaller than the average occupied by some of the other specialities. The reasons for this economy may be found in the fact that treatment chairs are used in place of tables, all patients' rooms are combination examining and treatment rooms, no dressing rooms nor X-ray and other space-consuming facilities are required. The examining and treatment rooms can be quite limited in area, but it should be stressed that the relative position of furniture and equipment is of utmost importance. Mandatory special equipment includes such items as cuspidors connected to water supply and drain next to each treatment chair, suction and compressed air in each room (either piped from central location or built into individual treatment cabinets), electro cautery apparatus, etc. One room should be soundproof and isolated from street noises for audiometry, and at least one of the rooms should have only artificial light for transillumination. In this suite, too, the recovery room, which contains a couch and a lavatory, can be used to advantage for certain tests and procedures only performable on patients in a reclining position. As in several other suites, all utility and laboratory functions are combined into one compact unit which serves as a general workroom for the nurse. It includes refrigerator, work counter, supply cupboards, sink and pressure sterilizer, all centrally available from the treatment rooms and eliminating the need for duplication.



SURGERY

THE problem of striking a happy medium between the efficient, speedy handling of patients and achieving an atmosphere of unhurried individual attention is sometimes rather difficult to solve. Aside from the idealistic decisions, the final solution always depends on the answer to the economic question of how much space divided into how many rooms can be allocated for this and that purpose.

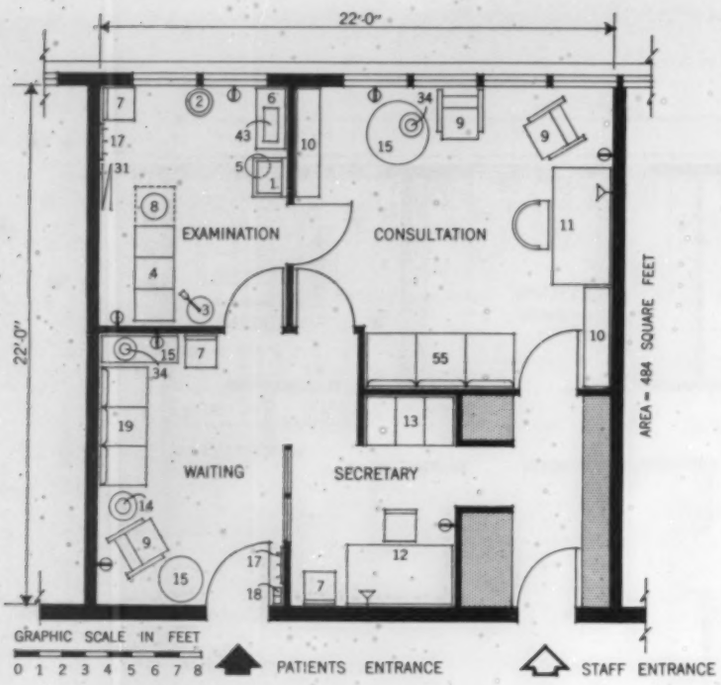
Conforming with the principal activities in the surgeon's office, the three workrooms of this plan have been labeled ostensibly "Examination," "Operating" and "Treatment-Recovery." Such a clean-cut separation, however, exists in name only, and can rarely be adhered to in reality. As a result of the varying case load and the considerable overlapping of these functions, the rooms must be designed for interchangeable use. For example, pre-operative examinations may be carried out in the minor operating room, stitches and casts may be removed in the examining room, dressings applied in the treatment room, etc. A logical deduction along these lines is the centralization of as much utility equipment and as many supplies as possible in a general nurses' work space independently accessible from all rooms. This would substantially increase flexibility and eliminate duplication. This utility area, often incorporating also certain laboratory facilities, does not have to be an enclosed room. On the contrary, an open bay, which does not entail the constant manipulation of an additional door, offers many advantages with respect to circulation and supervision. An inconspicuous location and at least partial shielding from patients' view, as suggested on this plan, are nevertheless desirable features.

ORTHOPEDICS

PERHAPS more than any other suite, the layout of the orthopedist's office depends a great deal on the type of practice and working system of each individual physician. It is therefore extremely difficult to standardize on assumed, so-called "basic requirements." An infinite variety of possible activities will have to be considered in each instance, all influencing the planning to a considerable extent. If, for example, the orthopedist prepares arch supports and braces in his own office, he needs a special workshop for this purpose; if he is concerned with physical therapy and is assisted by one or more physical therapists, anything from a small room with a whirlpool bath up to a completely equipped gymnasium or exercise room may have to be included; if he prefers to do his own X-ray work, he will naturally require a separate X-ray room including film storage and darkroom. The plan shown here can obviously illustrate only one out of a multitude of different solutions. In addition to an examining room and a general treatment room, primarily intended for orthopedic work, a condensed physical therapy unit has been included for the sake of demonstration. It is divided into two curtained booths (one for hydrotherapy, and one for electrotherapy) with access through an open exercise area, incorporating some of the equipment normally encountered in this department. It should, however, be remembered that the comparative lack of privacy of this arrangement causes many physicians to prefer instead several separate rooms, even though decidedly more floor area is consumed thereby. If equipped as shown on the plan, the utility room serves as a general workroom for cleaning, preparing and storing supplies, instruments, plaster cart, etc., but, as mentioned before, its use is optional and adaptable to different activities. If space permits, a separate entrance and waiting alcove for non-ambulant and crippled patients on crutches will often save uncomfortable situations.

RADIOLOGY

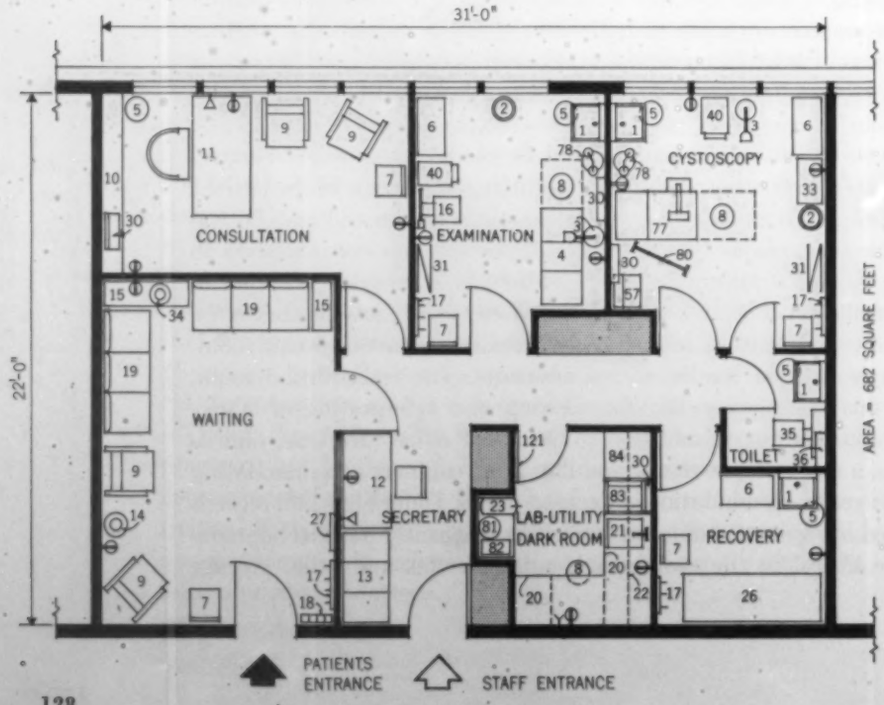
THE practice of the radiologist, in common with the one of the pathologist, differs from the other medical specialties in several respects. First of all, it assumes primarily the form of a consulting service for diagnosis and interpretation, and is therefore entirely dependent on the referral of patients from other physicians. In the second place, many practicing radiologists have part-time connections with X-ray departments of hospitals, clinics and other institutions where they have additional facilities and equipment at their disposal. Although the center of activities is unquestionably the fully equipped diagnostic X-ray suite for radiographic and fluoroscopic work, complete with film storage, darkroom, toilet and dressing rooms, a small therapy room for X-ray and sometimes radium treatments may occasionally be desired by the radiologist. The location and thickness of lead lining in walls, floors and ceilings, and the extent of other X-ray protection devices for diagnostic and therapy room, depends of course on the type and capacity of the equipment used. In any case, the controls of both rooms should be placed behind safe barriers with lead glass observation windows, permitting a full view of the patient during exposure to radiation. The diagnostic room should not be too restricted in size so as to allow referring physicians and even relatives to be present while the examination of a patient is in progress. The use of barium enemas in connection with certain X-ray examinations makes the inclusion of toilet facilities, immediately accessible from diagnostic room, a mandatory item on the list of requirements. The consultation room, which in this case serves also for viewing and interpreting of X-ray plates, should contain, in addition to the usual office furniture, film illuminators, a stereoscopic viewer and film filing cabinets accommodating at least one year's accumulation of exposed plates. Older films and records may be filed in separate storage areas, which frequently need to be somewhat more liberal in the radiologist's suite for this and other storage problems.



PSYCHIATRY ▸

SEVERAL features, peculiar to the requirements of the dermatologist, distinguish this suite from some of the other offices. In the first place, as much good daylight as possible is an absolute "must" for the examination room. Since the initial interview and the patient's history is intimately related to the corresponding manifestations of the complaint, many dermatologists prefer the combination of consultation and examination in one room over the usual separation into two. Such a dual purpose room must consequently be large enough to accommodate the functions and equipment ordinarily attributed to consultation room and examination room.

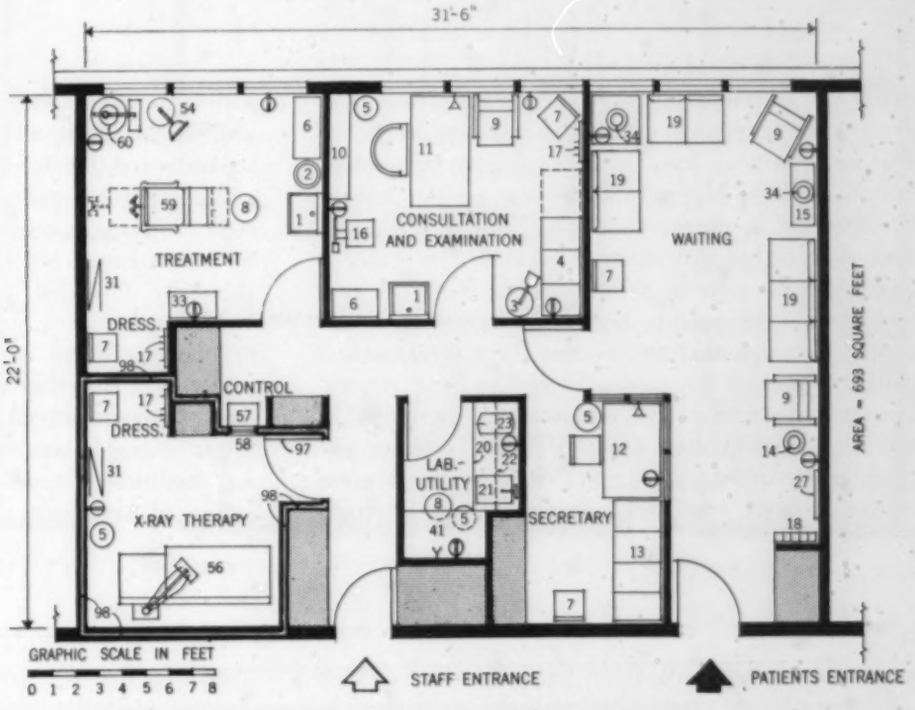
Another indispensable facility of this suite is a protected X-ray therapy room with exterior control station behind a lead glass observation window allowing full view of entire table. In some offices as many as 80 per cent of the patients receive X-ray treatment, in which case it may be necessary to equip more than one room with X-ray machines. Other treatment facilities, such as light ray and heat wave equipment, electro cautery and desiccation apparatus, etc., are concentrated in a general treatment room. A special chair, which can easily be converted into a horizontal table, is adaptable for treatment of patients in a sitting as well as in a reclining position. The indicated dressing alcoves, shielded by folding screens, illustrate an economical compromise between fully enclosed dressing rooms and entirely open accommodations, consisting of nothing but a chair and a hookstrip in one corner of examining or treatment room. (See also p. 121.)



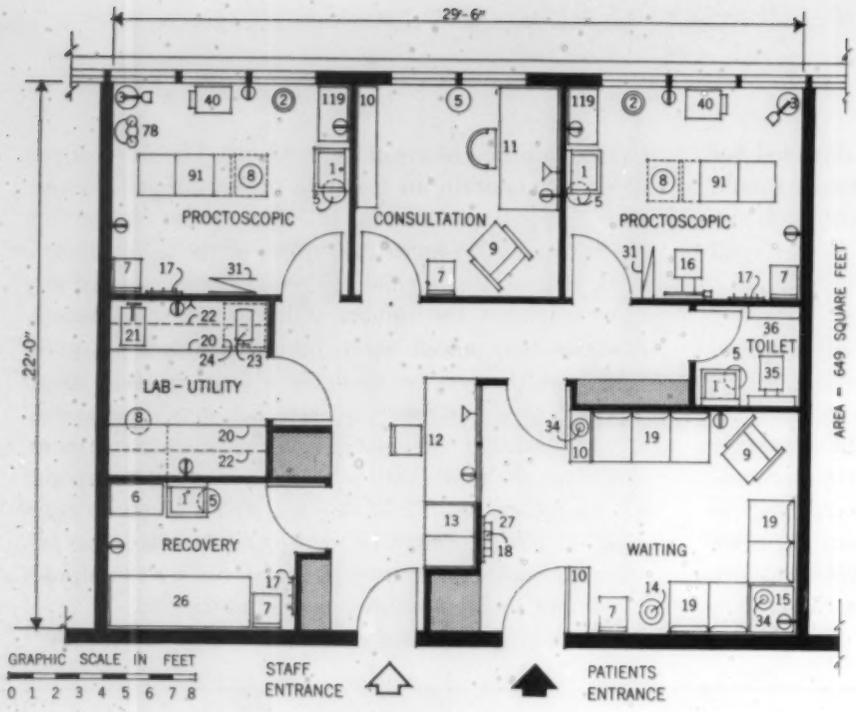
UROLOGY ▸

In dealing with the design for an office intended for diagnosis and treatment of mental disorders, it should always be kept in mind that the psychiatrist's job can be facilitated or complicated by the patient's emotional reaction to the effect of the physical environment. This is especially important in the waiting room and in the consultation room where an inviting, relaxing atmosphere, created by skillful treatment of space, texture, color and light, may vitally contribute to produce the desired release of tension which forms the necessary preliminary step in any successful psychiatric approach. In contrast to all other offices, the main emphasis in this suite is placed on the consultation room, in which the patients remain during most of their visits. Particularly important, according to some psychiatrists, is the relative position of the office furniture. The psychiatrist needs to maintain an intimate conversational contact with the patient (without interference by obstructing objects on desk). Since the nature of the psychiatrist's work requires more time per patient than that of any other specialist, the number of daily office visits usually averages only about seven or eight, which means in turn that there is no need for a large waiting room. The general examination room, which should be accessible from waiting area as well as from consultation room, serves for the customary routine physical check-up and for neurologic testing of reflexes. From a construction point of view it should be mentioned that acoustic privacy is essential, a factor which may call for soundproof doors and sound insulation in the partitions.

◀ DERMATOLOGY

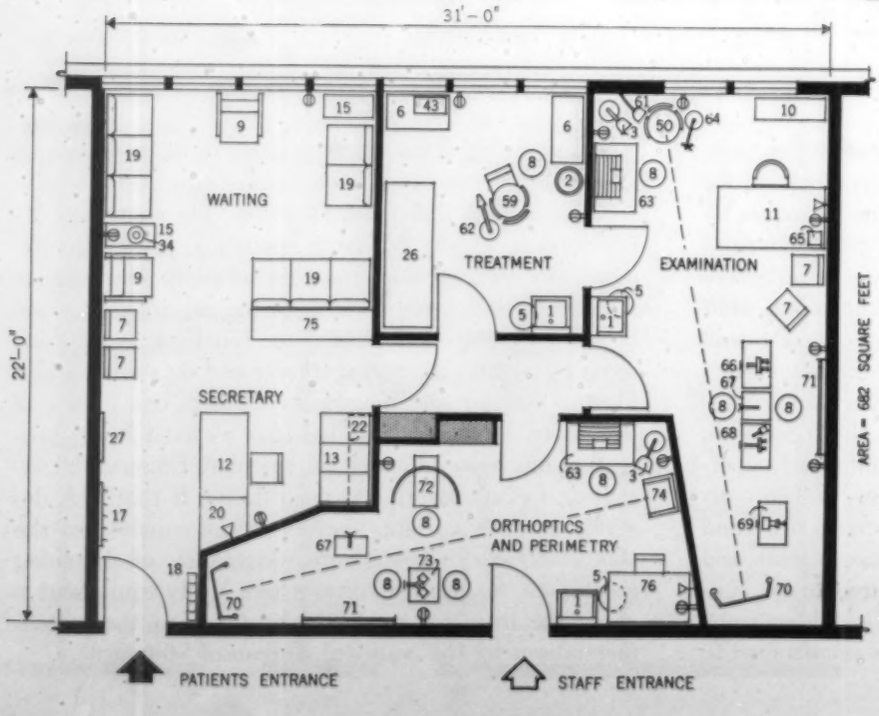


The Consultation-Examination-Treatment section, which, according to the generally accepted formula for this area, should consist of at least three rooms, is located in its entirety along the preferred exterior wall of the suite. A relatively compact solution is nevertheless possible by arranging an inside waiting room, staff work area and recovery room along the opposite wall adjoining the public corridor. Again, the secretary's office, which in this case also serves as private entrance for physician and personnel, dominates the scene from the point of view of circulation. It permits easy supervision over waiting room, both entrances, interior corridor, and it is conveniently located for calls from and access to consultation room, examination rooms and nurses' workroom. A few special features to be considered in the design of this suite merit at least some brief remarks. Since many urologists are accustomed to perform radiographic examinations in their offices, a cystoscopic X-ray table with control unit and movable screen has been indicated. However, the volume of X-ray work is usually not large enough to justify the expense of a separate dark room installation. The familiar laboratory-utility room combination can in most cases be made capable of absorbing the functions of the dark room by slightly increasing its size and by adding a film loading counter and developing tank in one corner of this room. It should be noted that no fixed X-ray protection has been indicated on the plan, because the extent and exact location of lead lining, if required, depends on such variable factors as the capacity of the tube, frequency of exposure, occupancy of adjoining rooms, etc. As in other suites where X-ray equipment is used, the installation should conform to the recommendations by the National Bureau of Standards.



PROCTOLOGY

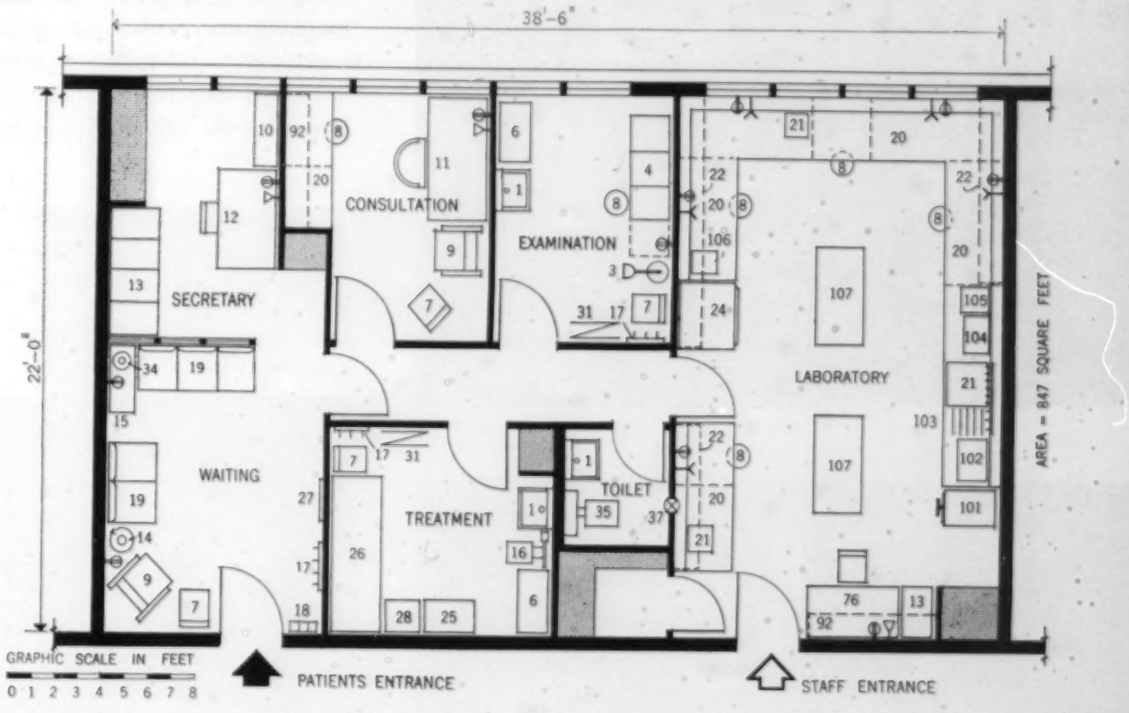
THE layout of the pathologist's office depends first and foremost on the volume of work he handles, on the arrangement he may have in one capacity or another with one or more hospital laboratories, on the number of technicians he employs and on the type of referral connections he has with other physicians. The center of activities in his suite is the clinical laboratory for performing and interpreting an immense variety of diagnostic tests and analyses. For ease of supervision and control, one single large room is said to have unquestionable advantages over several smaller ones, unless the work load exceeds certain practical limits. In either case it is desirable to separate the activities into work areas for bacteriology, serology, chemistry, hematology, histology, etc. Besides the laboratory proper, the pathologist needs an office which usually includes a separate counter for microscopic work, a general examination room and at least one so-called treatment room. This room, containing a bed or couch, is not used for treatment in the common sense of the word. It is primarily intended for special procedures such as B.M.R.'s, E.K.G.'s, spinal punctures, and for collecting of blood specimens, smears, gastric fluids, etc. As in the majority of the other office suites, these last mentioned patient rooms should be designed and equipped for interchangeable use. Supplementing the specimen-taking facilities, a toilet room adjoining the urinalysis section of the laboratory is a great convenience.



OPHTHALMOLOGY

PROCTOLOGY, sometimes classified as a sub-specialty of surgery, could probably be practiced in a suite designed for a general surgeon with only minor adaptations. The list of planning requirements does not contain any particularly outstanding items, and this layout was primarily included for the sake of completeness. The principal special features, deviating from the general surgical program, may be summed up as follows: Instead of typical examining tables, often placed with head or side against a wall, all examination and treatment rooms should be equipped with free-standing proctoscopic tilt tables. It will also be necessary to provide suction outlets in these rooms. Here, as in several other offices, the inclusion of at least one toilet within the suite is considered unavoidable. Sometimes preference is expressed for locating it in a treatment or even in a recovery room so that it can also be used in connection with high colonic irrigations and other procedures. A compact nurses' work space, which is in effect a combination utility room and laboratory with storage closets, similar to the one proposed for the surgeon, will most likely answer the proctologist's needs as well.

CLINICAL PATHOLOGY



THE ophthalmologist, like the ear-nose-throat specialist, being concerned primarily with examinations performed on the head and usually with the patient in a sitting position, substitutes the less space-consuming barber type chair for the customary examining table used by other specialists. This advantage is, however, offset by his request for a 20 ft distance between patient's chair and vision chart.

Although mirrors and special charts designed for shorter distances are frequently used to conserve space, ophthalmologists agree that these substitutes are at best only compromises which should be avoided wherever possible. Here again office consultation and examination are ordinarily combined in one single space by reserving one corner of the examining room for desk, chairs and bookcase. In the examination room and orthoptics room, special attention should be given to the correct location of each piece of equipment, particularly the proper relationship between patient's chair, doctor's stool and trial lens case as shown. If orthoptic work is included in the ophthalmologist's practice and he employs a full-time technician, the inclusion of a separate room for that purpose is almost indispensable. It provides independent work space for corrective training of cross-eyed children, for the exacting and time-consuming perimetric testing of field of vision, and for a variety of other procedures which can conveniently be handled by a nurse or an assistant. Although the 20 ft length is not essential in this room, it will be a definite advantage to design it for this distance so that it can also be used as a second examining room. The treatment room, where horizontal positioning of the patient is sometimes necessary, may contain beside the special chair with adjustable back and head rest, a couch which will also serve for certain treatments as well as for recovery. The waiting room should be large enough to accommodate patients during their initial visit which requires two separate examinations and lasts about two hours. The greater part of these two hours is spent in the waiting room where dilating eye drops are administered.

MEDICAL BUILDING

THE Medical Building at Hartford is an unusually fine example of the principle that staff doctors' offices should be grouped near the hospital. It also offers a splendid case history of planning procedure to make that grouping most effective.

On the first point, the building brings together a hundred or so of the staff doctors in a building directly connected to the hospital. A year's operation has demonstrated that it saves time for doctors and patients, improves the scheduling of many hospital functions,

Joseph Molitor Photos

The Medical Building, though it is attached to Hartford Hospital, expresses its own plan requirements in form and fenestration. But it does use the same exterior materials and thus "fits in"

AT HARTFORD HOSPITAL

Connecticut Mutual Life Insurance Company, Owner

Moore & Salsbury, Architects
Robert Loomis, Structural Engineer
H. B. Van Zelm, Mechanical Engineer

from ward visits to operations, and gives the assurance of quick attention to patients in the hospital. It might also be mentioned that it is a wonderfully stable investment for its owners.

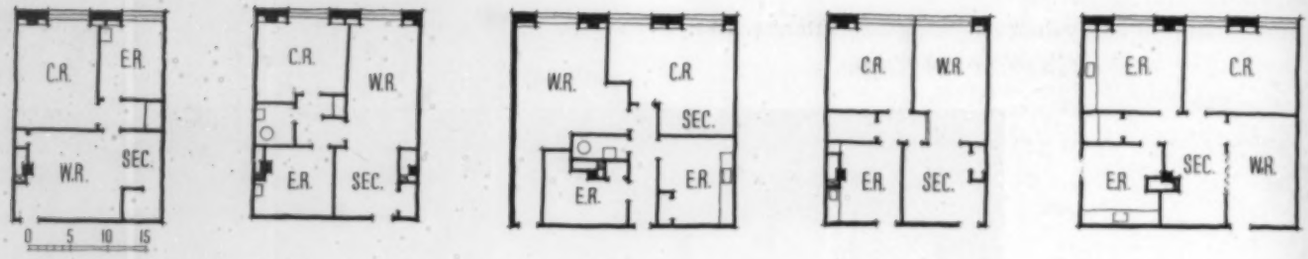
The planning of the building became a well organized effort, so that the rather complicated needs of the physicians could be studied and accommodated. The tenants being well known in advance, a doctors' committee was organized and given power to decide close questions with architects and owners in the group interest. And finally a sort of assembly line procedure was adopted to settle final details with individual tenants or tenant groups. All doctors who had tentatively signed up submitted questionnaire forms giving enough information to enable the architect to arrive at an area total and an approximation of mechanical services required. Also, the owner could work out rental figures in advance, at which point individual doctors made definite commitments. There were fixed agreements as to standard and special equipment. With such matters agreed upon,

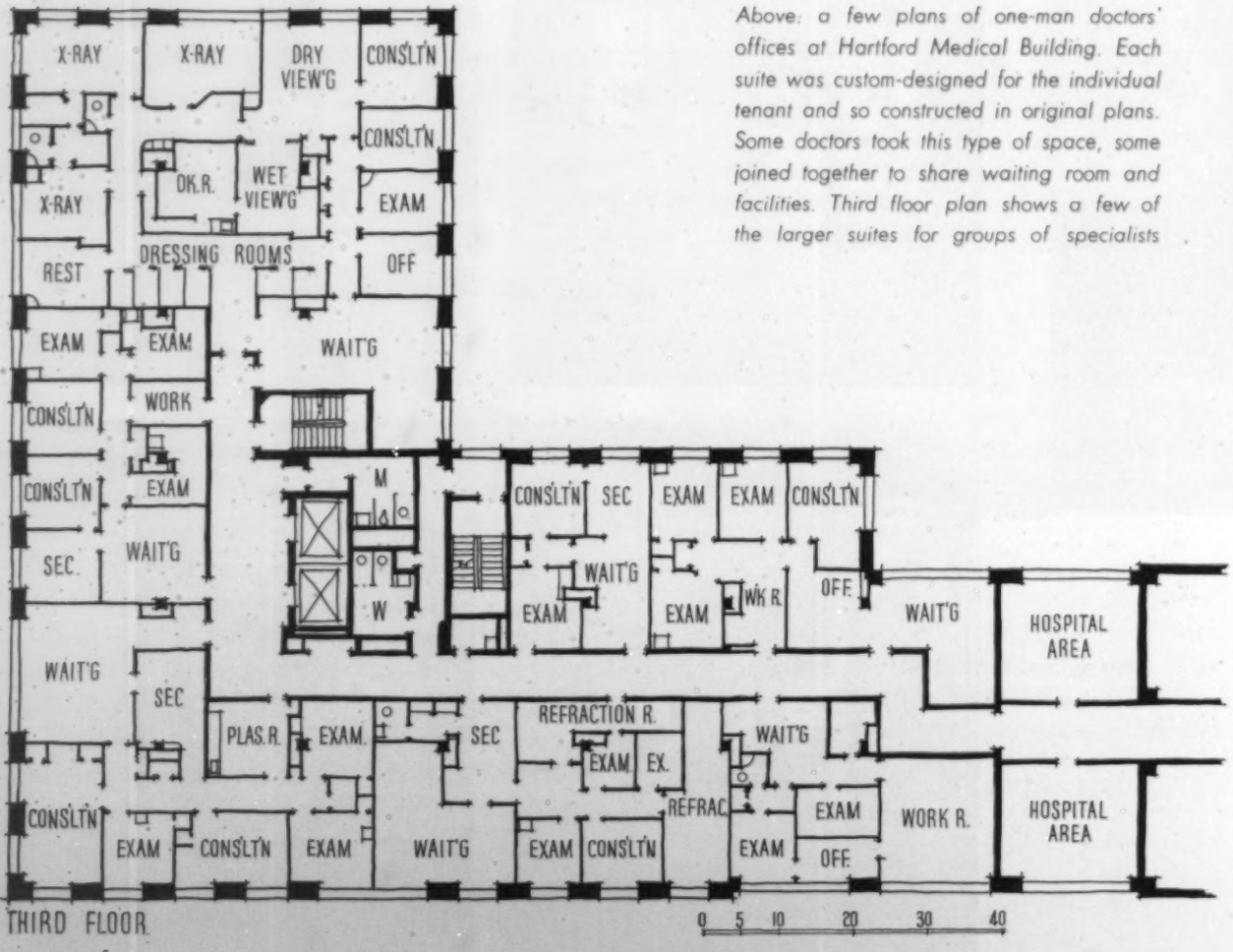
each doctor or group made appointments with the architects, and final layouts and details were settled upon. It therefore was possible to meet individual needs without getting hopelessly bogged down in negotiations.

The building is attached to the new Hartford Hospital, with direct communication on the lower floors. In spite of this close connection, the architects did not feel it necessary to duplicate the architectural expression of the hospital. There is a family resemblance, from the same basic exterior materials and some similarity in fenestration. But in general the Medical Building follows its own plan requirements and window arrangements. Windows are of the casement type with projected steel sash. All have permanent inside screens and venetian blinds.

The building is of firesafe construction, with steel frame, white glazed brick facing and cinder block backup. Floors are of cinder concrete, concrete filled.

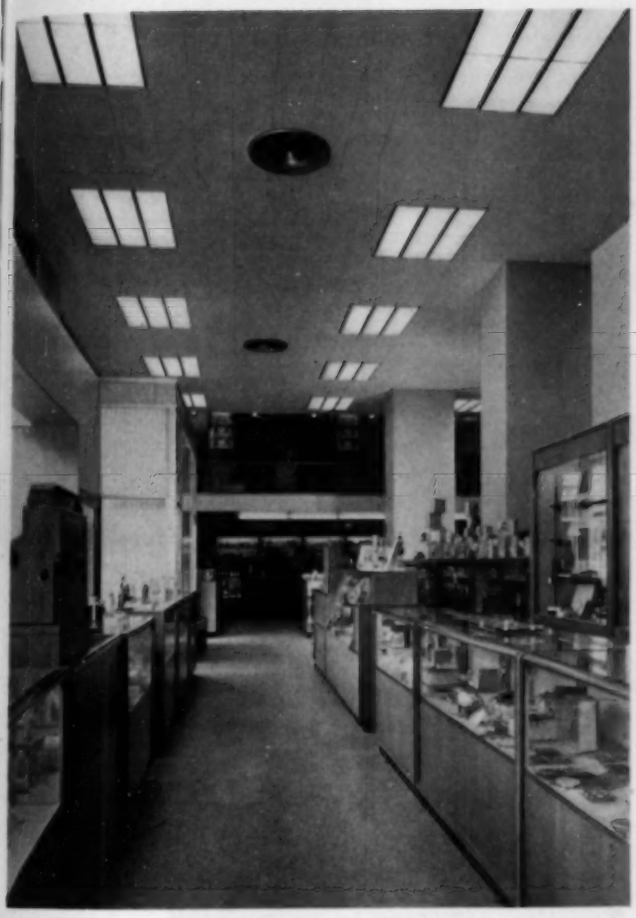
Ceilings throughout are suspended, using demountable metal acoustic tile. Besides providing good sound treatment, this system allows wiring and plumbing lines to be run in the ceiling space, then dropped as required in the partitions. All partitions within suites are hollow metal flush-type panels, delivered to the building in specified colors. Ceilings and floors were finished in advance of partitions, for ease in alterations.



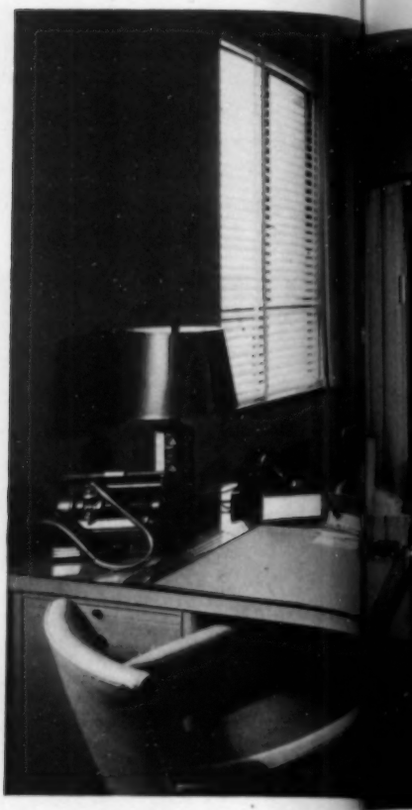


Above: a few plans of one-man doctors' offices at Hartford Medical Building. Each suite was custom-designed for the individual tenant and so constructed in original plans. Some doctors took this type of space, some joined together to share waiting room and facilities. Third floor plan shows a few of the larger suites for groups of specialists

Joseph Molitor Photos



Here are a few more or less typical waiting rooms, and, above, the drug store. All interior spaces have metal pan acoustic ceilings, suspended below a space left for plumbing and electrical lines, demountable metal partitions, prefinished to individual order



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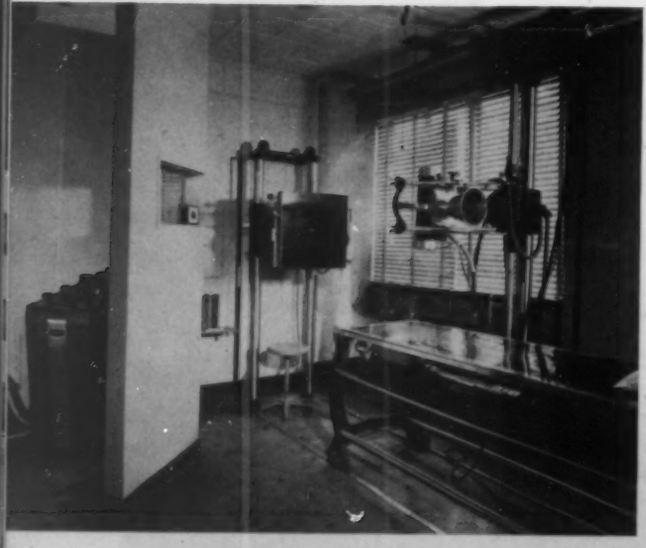


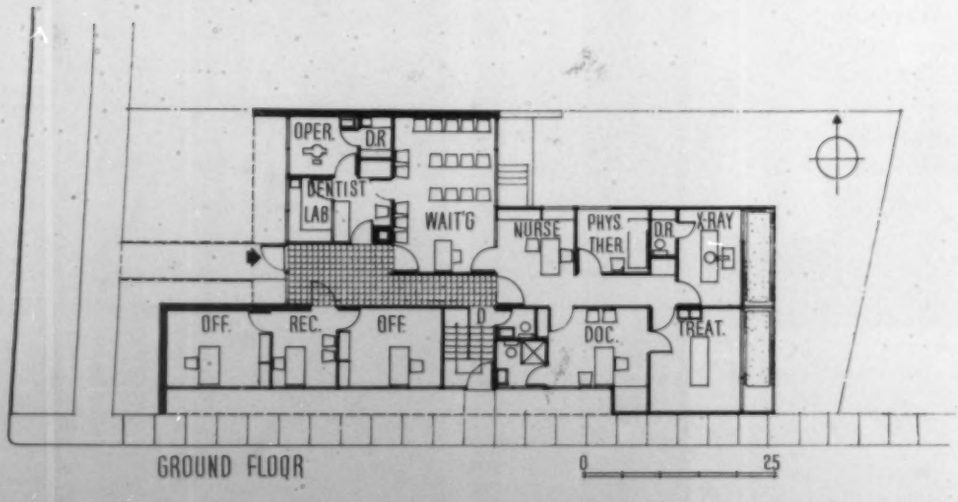
Office layouts in medical buildings have a habit of becoming complicated. These views give some idea of varying requirements as to use and equipment. There were standard agreements as to amount of plumbing and other equipment to be furnished by the owner, the rest to be installed by the building, billed to tenant

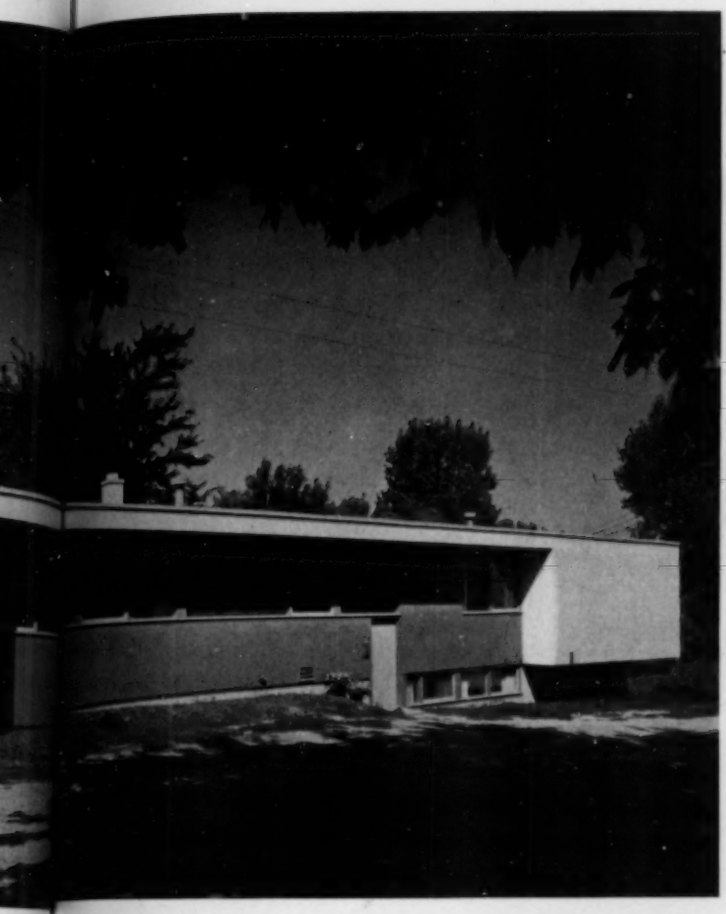
OFFICES FOR TWO DOCTORS

McHenry Clinic, McHenry, Ill.

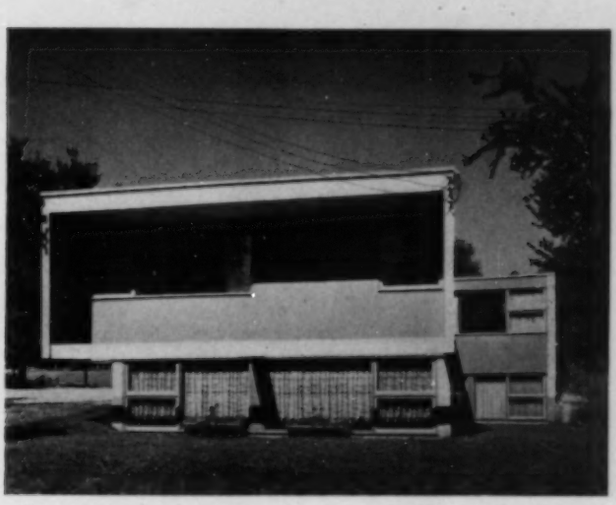
John Van Der Muelen, Architect

THIS little building was built by a physician-surgeon for his own use, with a second suite for a dentist. There were also three other offices, intended for rental to non-professional tenants. But the building was so nice, the location so good, that there was heavy demand for them from other doctors who work occasionally in the vicinity. So the three small offices are now shared by six Chicago specialists, each of whom spends pre-arranged hours in consultations here. A laboratory, not originally planned, is now occupied by a full-time technician serving all the doctors. There are facilities for emergency operating, but not for hospitalization.





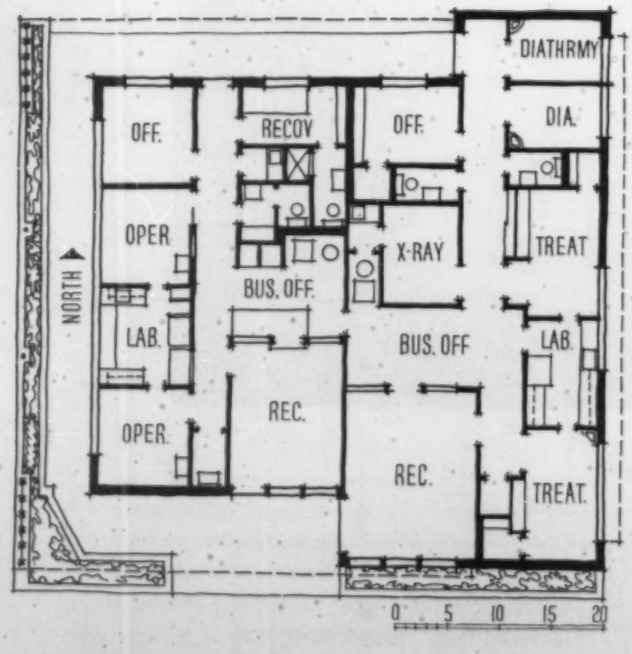
The building becomes elevated toward the rear, providing daylight for a small apartment and medical laboratory in the basement. The laboratory was an afterthought, made necessary by the crowding in of specialists not originally contemplated as tenants



Hedrich-Blessing Photos

Building has a frame of steel beams and columns, with wood studs and joists. Exterior surfaces are brick and vertical T & G wood. Floors are of plywood with linoleum surfacing. Interior walls are of painted plaster over wood studs. Fluorescent lighting in ceiling troffers

SUBURBAN BUILDING FOR DOCTORS



Not all doctors want to be close to the business district or even to the hospital. This little building is, then, a reversal of the centralization idea that was paramount in foregoing examples. Indeed it seems to represent an excellent idea for commercial development of outlying property. The site in this instance was once an apricot orchard, now in process of subdivision. Its frontage on three boulevards made commercial buildings seem logical, and a medical building was a good beginning.

The building is designed for the separate practices of a physician and a dentist. It was planned so that complete separation could be maintained, with separate entrances and waiting rooms. Nevertheless, the architects considered it wise to keep reception areas close together, so that should occasion arise the two suites could be joined together for operation with a single receptionist.

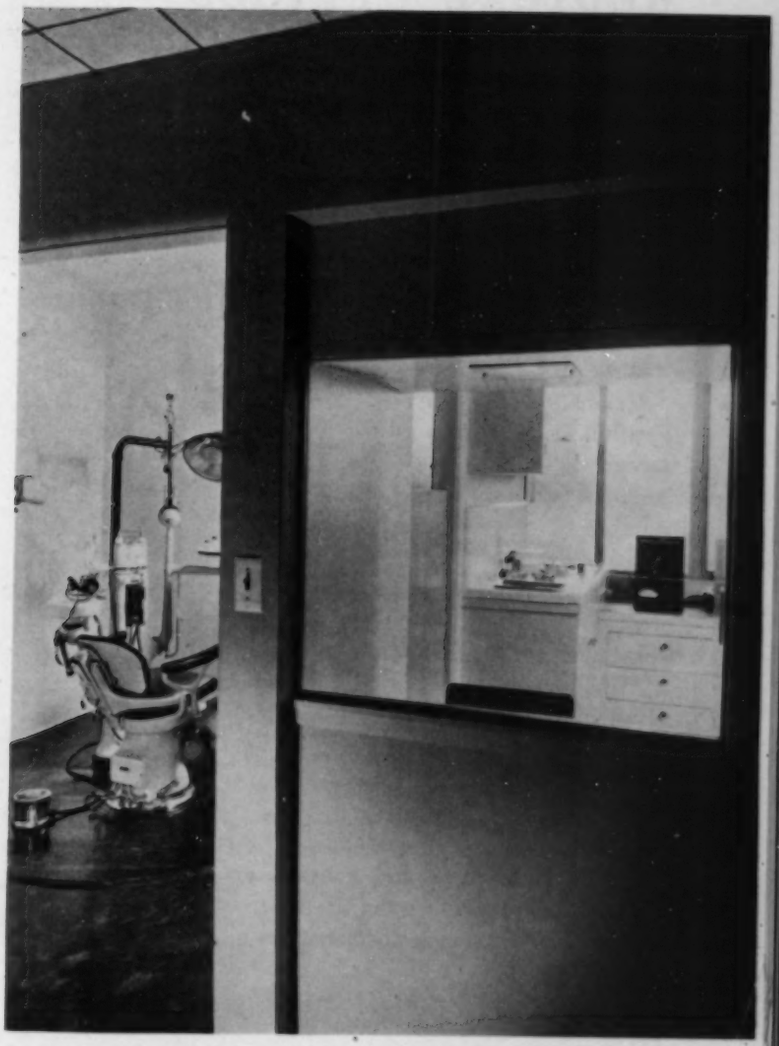
The long porchlike affair with its elevated planting beds is not as whimsical as it might appear. This is the western exposure, and the hot afternoon sun here is something to contend with. The roof extension protects the west side of the building completely, and the flower beds add further cooling effect.

Medical Building, North Hollywood, Calif.

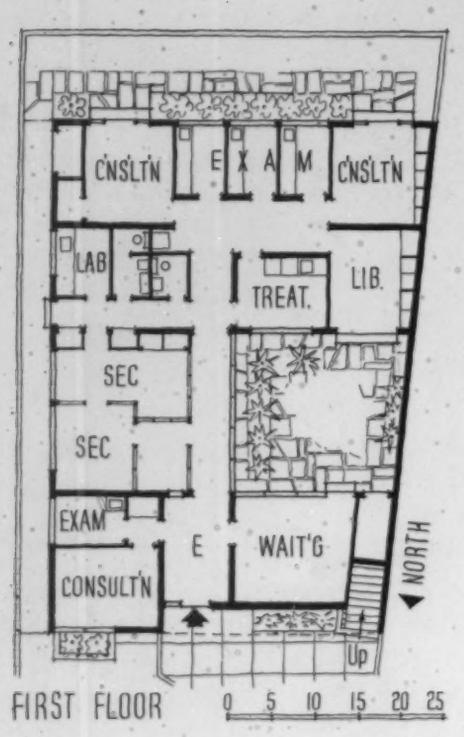
Edna Vetter, Owner

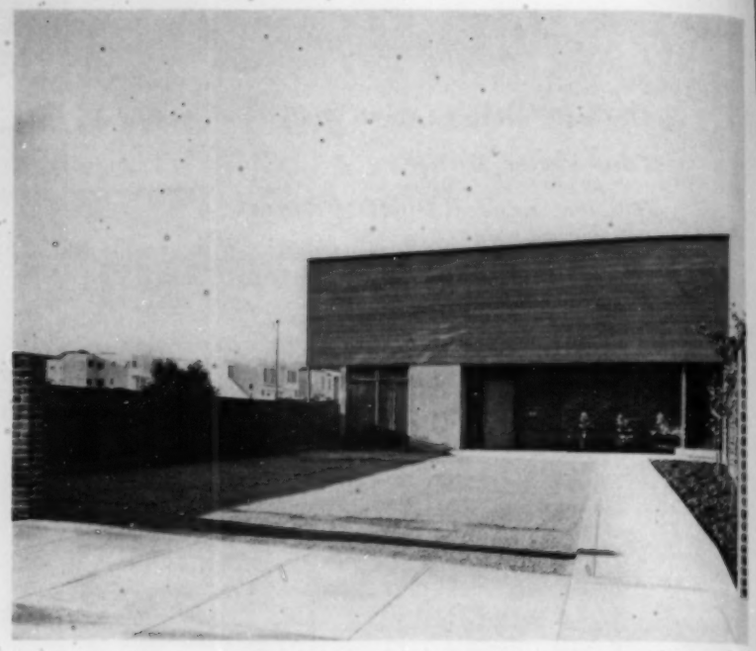
Office of Randall Duell, Architect

Julius Shulman Photos



Exterior is common brick, interior walls are frame and stucco. Floors are asphalt tile over concrete slab. There is a separate forced air unit for each suite that can be used for cooling in summer. As additional protection from heat the roof was extended on west side to keep off the hot afternoon sun





Randal Partridge Photos

MEDICAL OFFICES WITH PARKING

Shaw Medical Building, San Francisco

Francis Ellsworth Lloyd, Architect

BUILT to the requirements of three pediatricians, this building was put in a residential location. This was, of course, to make it easy for mothers and small children to visit the doctors, but it has the happy effect of lessening the number of supernumeraries who accompanied the mothers, for now a visit to the doctor is much less an occasion than when the offices were downtown. The building was set back for convenience in parking.

Making the small fry seem at home was given much attention by the architect. Colors and general feel were made as homelike as possible, and the small outside court provides a play area for waiting tots.

The plan gives exceptionally good separation to waiting, business and consultation areas. The one consultation room at the front is for an allergist, whose appointments are brief.

MEDICAL BUILDING IN THREE UNITS

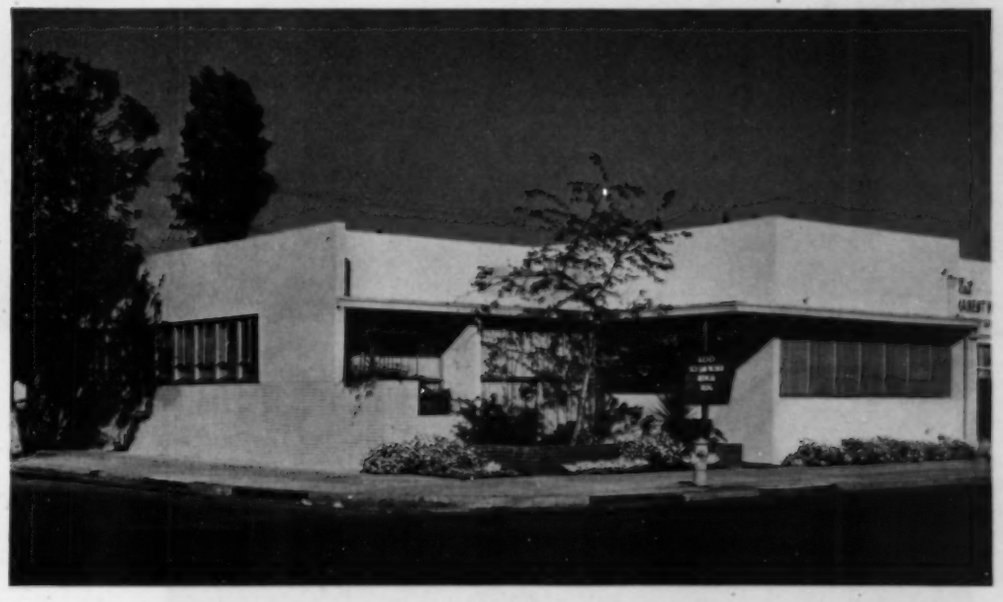
600 South San Vicente Boulevard, Los Angeles

Rolf Sklarek, Architect

THE doctor-owners' request for three separate units here produced a unique plan solution for a building on a narrow lot. The conventional scheme in these parts calls for two front units and a third distinctly rear one reached by a long exterior walk. But in the scheme developed (plan above) the rear unit has been found to be the preferred location. Its patients use the same entrance, it gains convenience to the parking space, and patio gives it extra pleasantness.

The patio, incidentally, aids in the acoustical isolation of the three units, beside contributing its graciousness to the building. This scheme had the further merit of utilizing parking space to best advantage, since no space need be left for turn-arounds.

Julius Shulman Photo

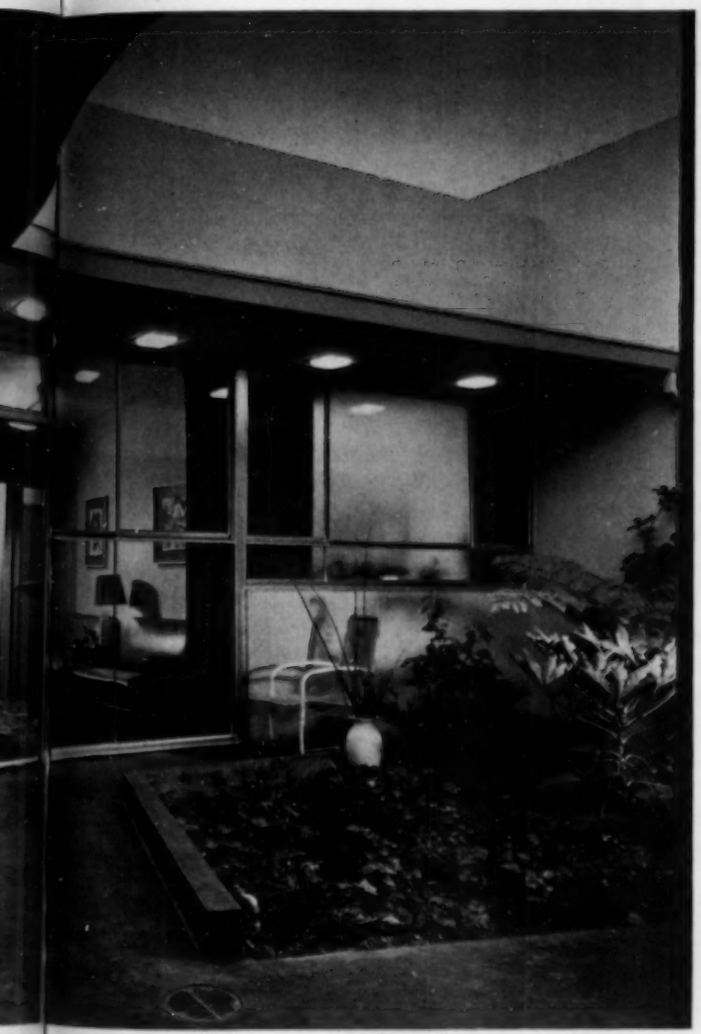


Julius Shulman Photos

Since the building has a solid slab floor, planning for flexibility in plumbing lines was something of a problem. Many possible layout schemes were considered, to be sure that original plumbing installations would accommodate the most combinations of space.

A tight budget prevented the contemplated use of metal demountable partitions. Each unit is constructed with full-span roof rafters, so that no partitions need be load bearing. End walls were built as rigid frames, with some steel, for earthquake resistance.

The building uses a unique system of radiant floor heating and radiant cooling with the same piping, in combination with a "heat-pump" central unit. Results of this courageous choice have been quite good. However, the system is much too involved for description here; it will be reported in detail in a later issue.



An enclosed patio not only adds a pleasant note to two of the three reception rooms, but also serves to maintain acoustical separation of the suites. A corridor serves the same purpose of isolation, so that each suite is in effect a different building. In this scheme the rear unit has proved the most desirable

MOVING STAIRWAYS IN OFFICE BUILDINGS

By G. B. Gusrae

Voorhees, Walker, Foley & Smith, Architects

DURING the past two years, there has been a noticeable increase in the use of moving stairways for vertical transportation in office buildings. They were installed in the Chrysler Corporation Building, Highland Park, Mich., in 1948 to serve from the ground to fifth floor. Large groups of employees are transported from the ground to the eighth floor in the John Hancock Building by 4-ft moving stairways. Remaining floors of this 26-story building are served by 21 elevators. All floors of the five-story Tennessee Coal and Iron Co. building, Fairfield, Ala., will be reached by 14 moving stairways.

Office buildings have a high density population, normally requiring large elevator plants involving considerable capital outlay. This is especially true in single purpose office buildings where all employees arrive and leave practically simultaneously.

The substitution of moving stairways for some or all of the required elevators in office buildings to reduce costs has met with success. The objective of this article is to compare the economics and services of both and thus furnish tentative guide lines for determining how many moving stairways should be used in a projected office building with any number of stories.

General Rules

(1) Moving stairs should be considered for buildings with 600 or more people distributed above the main floor.

(2) Moving stairways should be limited to an overall rise of 6 floors for satisfactory service. The rise certainly should not exceed 8 floors, unless special conditions such as heavy inter-floor traffic justify it.

(3) In a vertical transportation system employing moving stairways, at least one service elevator must be provided for carrying disabled persons and freight.

(4) Moving stairways are preferable to an economically equivalent or costlier elevator installation.

(5) Even in cases of economic disadvantage, the elimination of machine room and elevator pits, lesser steel loads, the immediate availability, large carrying capacity or requirement of rapid clearing or filling of a building may be determining factors.

Moving Stairway Chosen

At present the moving stairway sizes have been standardized at 2 ft, 3 ft, 4 ft and 32 in. widths. The latter is known as the "budget" size. These stairways are theoretically capable of carrying 4000, 6000, 8000 and 5000 persons per hr, respectively.

The 32 in. size has been chosen for this study because it is best suited for an average office building from the economic point of view. Some of the features of this stairway are:

Approximate width of step	24 in.
Space between balustrades	32 in.
Speed	90 to 125 ft per min (along incline)
Capacity	5000 to 6500 persons per hr
Cost	$22,000 to $25,000 per unit

A speed of 125 fpm and the unit cost of $25,000 have been assumed in all discussions.

Advantages of Moving Stairways

Availability. The moving stairway is available to passengers for immediate use at all times thus eliminating the waiting period and floor stops inherent in any elevator installation.

Carrying Capacity. The size "32," 125 fpm moving stairway has a rated capacity of 540 persons in a 5 min interval. This is equivalent to about fourteen 2500 lb or about eleven 3500 lb elevators.*

Space Occupied. The area required for two, side by side, moving stairway units ** is 8½ ft wide and about 50 ft

* *Based on two round trips in 5 min.*

** *A moving stairway unit is the mechanism, one step wide, for one story.*

All floors of the Chrysler Corp. administration building are reached by moving stairways. Albert Kahn Associates, Architects

Moving stairways in John Hancock Building run from ground floor to the eighth; elevators serve rest. Cram and Ferguson, Architects

long. This length includes 8 ft access at each end of every unit. The total area is 425 sq ft.

The area required for three average size elevators including an 8-ft wide access corridor is about 17 ft wide and 30 ft long or 510 sq ft.

Since various codes permit the use of moving stairways as means of egress, the cost of at least one stationary stair and the value of additional floor space made available can be applied against the cost of the moving stairway.

Elevator Attendants. The substitution of moving stairways for elevators dispenses with the services of elevator attendants. The yearly cost of an elevator attendant in the New York City area has been estimated at $5000. This includes a yearly salary of $3500, the cost of relief, starter, uniform and insurance.

Machine Room and Pit. The substitution of moving stairways for elevators eliminates the need for an elevator machine room on top of the building and elevator pits under the lowest landing. Under some circumstances this saving may be considerable.

Power. A moving stairway unit requires 2 to 3 kw of electric power per hr as compared with 5 to 10 kw per hr for each elevator.

Supporting Steel. The weight and live load of two average moving stairway units per floor is about 60,000 lb as compared with the 60,000 lb for each elevator. The steel supporting the load of an elevator must extend in uniform size through the entire height of the building whereas the steel supporting the loads of the moving stairway units can be decreased in size from floor to floor as the successive number of stairway units decreases.

Shutdown. The shutdown of an elevator deprives the building of one unit of vertical transportation for all floors. The shutdown of one moving stairway affects only one floor in one direction. The adjacent stairway unit can be made to reverse its direction of travel so as to take the place of the shutdown unit should this be necessary.

Disadvantages of Moving Stairs

Speed. The obvious disadvantage of the moving stairway is the relatively slow speed of vertical transportation. Although the moving stairway has a very large passenger carrying capacity as compared with elevators, its vertical speed at its best is only 60 fpm. Considering the additional 5 to 8 sec required for walking between stairway units, the vertical speed of a 125 fpm stairway is equal to an elevator speed of 35 fpm.

The fact that the same passenger may have to wait as long as 2 min for elevator service in no way alters his reaction to the apparently long travel time on the moving stairway. A certain amount of education in this sphere would contribute a good deal to a more positive attitude of the public to the moving stairway as a means of transportation to higher floors.

Personal Feeling. To some passengers a moving stairway represents transportation where the passengers have to do a good deal of work as contrasted with the attendant operated elevators where the passengers are being transported at their leisure. Obviously, more alertness is required of the moving stairway passenger than of the relatively relaxed person in an attendant operated elevator.

Disabled Persons and Freight. The moving stairway is unsuitable for those partially or totally disabled, for the infirm, for some aged persons and for those who suffer from certain phobias.

Freight loads, such as desks, chairs, tables, filing cabinets, safes, refuse, etc., common in office buildings, cannot be transported on a moving stairway.

To provide vertical transportation for disabled persons and freight at least one elevator must be provided with a moving stairway installation.

Daily Cost of Moving Stairways and Elevators

The daily cost values, as indicated in Table I, show that an average moving stair unit costs about $9.15 per day, self-service elevators $8.50 to $24.90 per day, and attendant operated elevators $25.20 to $41.60 per day. These values will be used for determining the economic feasibility of replacing elevator installations with moving stairways.

When Should Moving Stairways Be Considered?

Table II was prepared to help determine when moving stairways should be used. The values in the table indicate the number of elevators which are economically equivalent to a respective moving stairway installation. For instance, in a 4-story building, 6 moving stairway units and one freight elevator will cost $63.40 per day. Five $30,000 self-service elevators will cost, as explained in the subsequent paragraph, $65.50 per day. The two cost values are practically equivalent. Therefore, in a 4-story building, whenever five or more $30,000 self-service, or two or more attendant operated elevators are contemplated, the use of a moving stairway

Table I is not a comparison of costs of elevator and moving stair, but a list of various costs, on a daily basis. Notice that the daily cost of moving stairway shown must be multiplied by the number of floors served. Elevator costs shown are for the entire installation, the choice depending on many factors—height, speed, building population, etc.

TABLE I—DAILY COST OF MOVING STAIRWAY AND ELEVATOR

	Moving Stair Unit (one-story)	ELEVATOR (various stories)							
Capital Invested	25,000	20,000	25,000	30,000	40,000	50,000	60,000	70,000	80,000
Capital Recovery	1450.00	1160.00	1450.00	1740.00	2320.00	2900.00	3480.00	4050.00	4620.00
Liability Insurance	200.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Electric Power	270.00	550.00	600.00	650.00	700.00	750.00	800.00	850.00	900.00
Maintenance	500.00	500.00	600.00	700.00	900.00	1100.00	1300.00	1400.00	1600.00
Space Cost	320.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00
Total Cost per year	2740.00	2560.00	3000.00	3440.00	4270.00	5100.00	5930.00	6650.00	7470.00
Daily Cost—self-service	9.15	8.50	10.00	11.50	14.20	17.00	19.80	22.20	24.90
Daily Cost with elevator attendant		25.20	26.70	28.20	30.90	33.70	36.50	38.90	41.60

A capital recovery factor of 0.05783 was based on 30 year life of equipment, 300 days per year and 4 per cent return. (This is the money that has to be put aside to replace the installation at the end of 30 years.)

The liability insurance premiums are estimated. The cost of power is estimated at 3 cents per kwh, 10 hrs each day. Cost of occupied space is based on $2.00 per sq ft per yr. Cost of an elevator attendant is estimated at $16.70 per 10 hr day, including the cost of relief, starter, uniform and insurance.

installation with one freight elevator would be preferable.

Since a moving stairway installation occupies 15 per cent less space than three average elevators, a space value correction factor was included in the elevator figures of Table II.

For instance, the moving stairway installation in a 4-story building costs $63.40 per day. Five $30,000 self-service elevators cost $57.50 per day. The substitution of moving stairways for the five elevators would occupy the space for only three cars.

The space released would be 2 by 150 ft per floor or a total of 1200 sq ft for the four floors. At the value of $2.00 per sq ft per year, this space is worth $2400.00 per year or $8.00 per day. Adding the space value to the elevator cost we obtain a figure of $57.50 plus $8.00 or $65.50, showing that an installation of five $30,000 self-service elevators is economically equivalent to a moving stairway installation.

It is interesting to note that, in some instances, an elevator installation may represent the same daily cost as the respective moving stairway installation, and yet the initial capital is not the same. For instance, for an 8-story building, six $70,000 elevators have the same daily cost as a moving stairway installation although the former will cost $420,000 to install and the latter only $375,000.

Another point worthy of note is the unusually small number of elevators operated by attendants, that can be made economically equivalent to a moving stairway installation. In a 4-story building whenever two or more $30,000 attendant operated elevators are contemplated a moving stairway installation should be considered preferable.

The preference of a moving stairway over an economically equivalent elevator installation is due to considerably larger carrying capacity of the former.

Examples

The following examples illustrate the application of Table II in determining whether elevators or moving stairways should be used.

Example 1

Height — 4 stories
Population — 280 per floor or 840 above main floor
Elevators required — 5 of the $30,000 class

According to the data in Table II, five $30,000 elevators are economically equivalent to a moving stairway installation. The moving stairway would be preferable. If attendant operated elevators are contemplated, the moving stairway installation will be considerably less expensive.

Example 2

Height — 6 stories
Population — 190 per floor, or 950 above main floor
Elevators required — 6 of the $40,000 class

Referring to data in Table II we find that the moving stairway installation is preferable regardless whether the elevators are of the self-service or of the attendant operated type. The moving stairway will be considerably less expensive than attendant operated elevators.

Example 3

Height — 14 stories
Population — 2800 above main floor
Elevators required — 12 of the $70,000 class

We note from data in Table II that for a 7-story building, 3 attendant operated $70,000 elevators are economically equivalent to a moving stairway installation. By substituting moving stairways for 6 attendant operated elevators to provide service to the 7th floor, and by running 6 attendant operated elevators express to the 7th floor and local 7th to 14th floor, considerably better service will be obtained at lesser expense.

Example 4

Height — 12 stories
Population — 1000 above main floor
Elevators required — 6 of the $60,000 class, attendant operated for fair service

By substituting moving stairways for 3 attendant operated $60,000 elevators serving main to 6th floor, and running 3 elevators express to 6th floor and local 6th to 12th floor, considerably better service will be obtained at same cost.

Table II gives a break point at which a certain elevator installation exceeds the cost of a moving stairway. In other words, having determined an indicated elevator installation, for a certain building, the designer may check, in this table, whether it is more or less expensive than a moving stairway plus one freight elevator. Basis is daily costs as determined from Table I

TABLE II

		4 FLOORS		5 FLOORS		6 FLOORS		7 FLOORS		8 FLOORS	
		Self-Service	with attend.	Self-Service	with attend.	Self-Service	with attend.	Self-Service	with attend.	Self-Service	with attend.
Moving Stairway Installation	Number of moving stair units	6		8		10		12		14	
	Number of freight elevators	1		1		1		1		1	
	Installation Cost	170,000		220,000		275,000		325,000		375,000	
	Daily Cost (from Table I)	63.40		81.70		101.20		119.50		137.80	
Economically Equivalent Elevator Installation based on Daily Cost	No. @ $20,000	6	2	7	3	8	3	9	4	9	5
	No. @ $25,000	**5**	**2**	**6**	**3**	7	3	8	4	9	4
	No. @ $30,000	**5**	**2**	**6**	**3**	**7**	**3**	7	4	8	4
	No. @ $40,000	4	2	**5**	**2**	**6**	**3**	**7**	**3**	7	4
	No. @ $50,000	4	2	4	2	**5**	**3**	**6**	**3**	**7**	**4**
	No. @ $60,000	3	1	4	2	5	3	**5**	**3**	**6**	**3**
	No. @ $70,000	3	1	4	2	4	2	5	3	**6**	**3**
	No. @ $80,000	3	1	3	2	4	2	5	3	5	3

Bold numbers indicate most logical elevator installations

Art Commercial Studios Photo

To free floor space of this shopping center in Portland, Ore., the engineer designed the roof to hang from five huge concrete frames

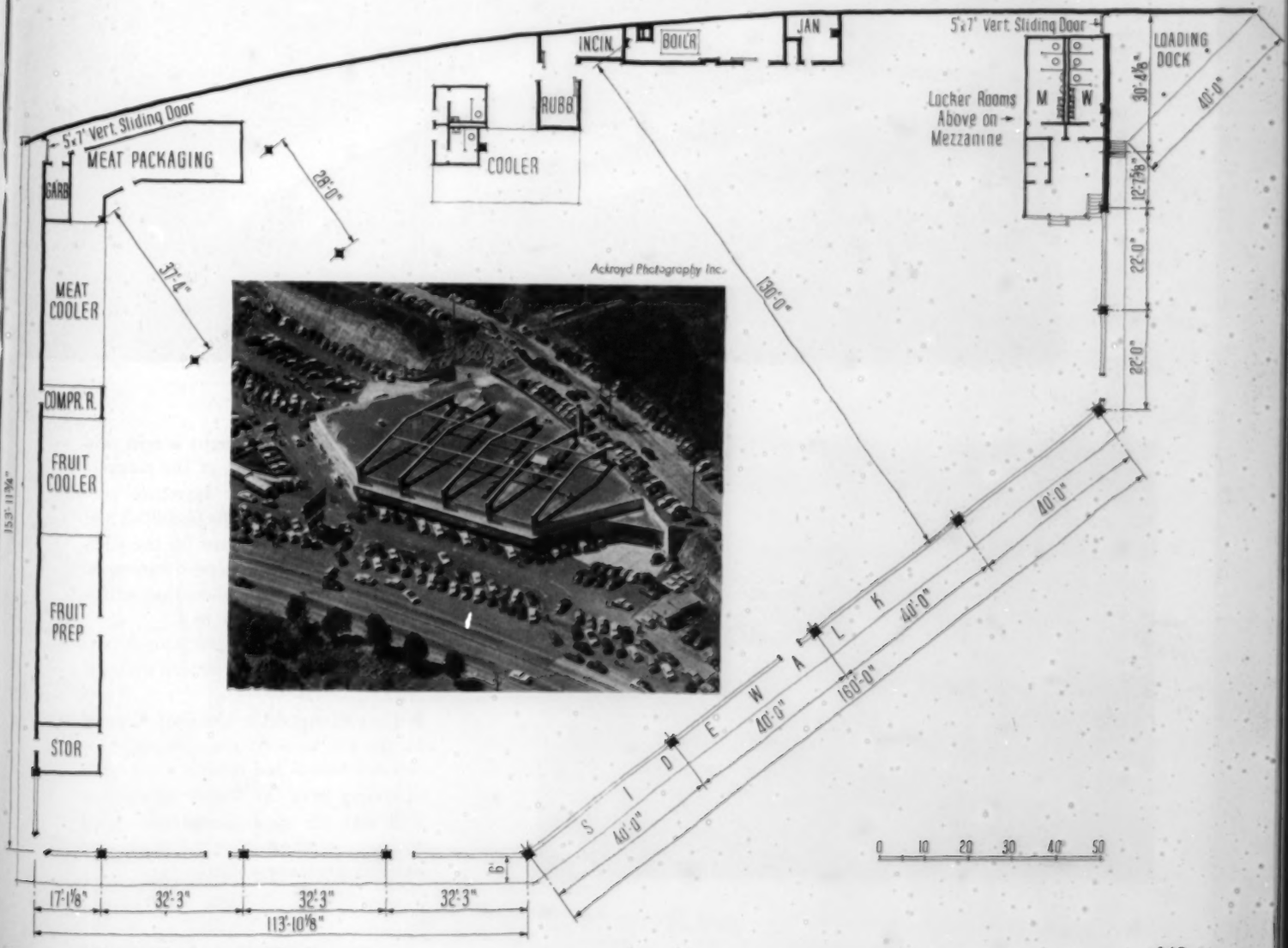
STORE ROOF HANGS FROM CONCRETE FRAMES

Designer: Leslie E. Poole, Engineer ***Contractor: A. M. Hocken***

FRED MEYER BURLINGAME is a complete shopping center under one roof: it combines a super market, drug store, coffee shop, apparel shop and appliance store. To enclose all these facilities takes a big roof. And if this roof were supported by conventional wood trusses and posts, the flexibility of merchandise display and location of traffic areas would have been limited.

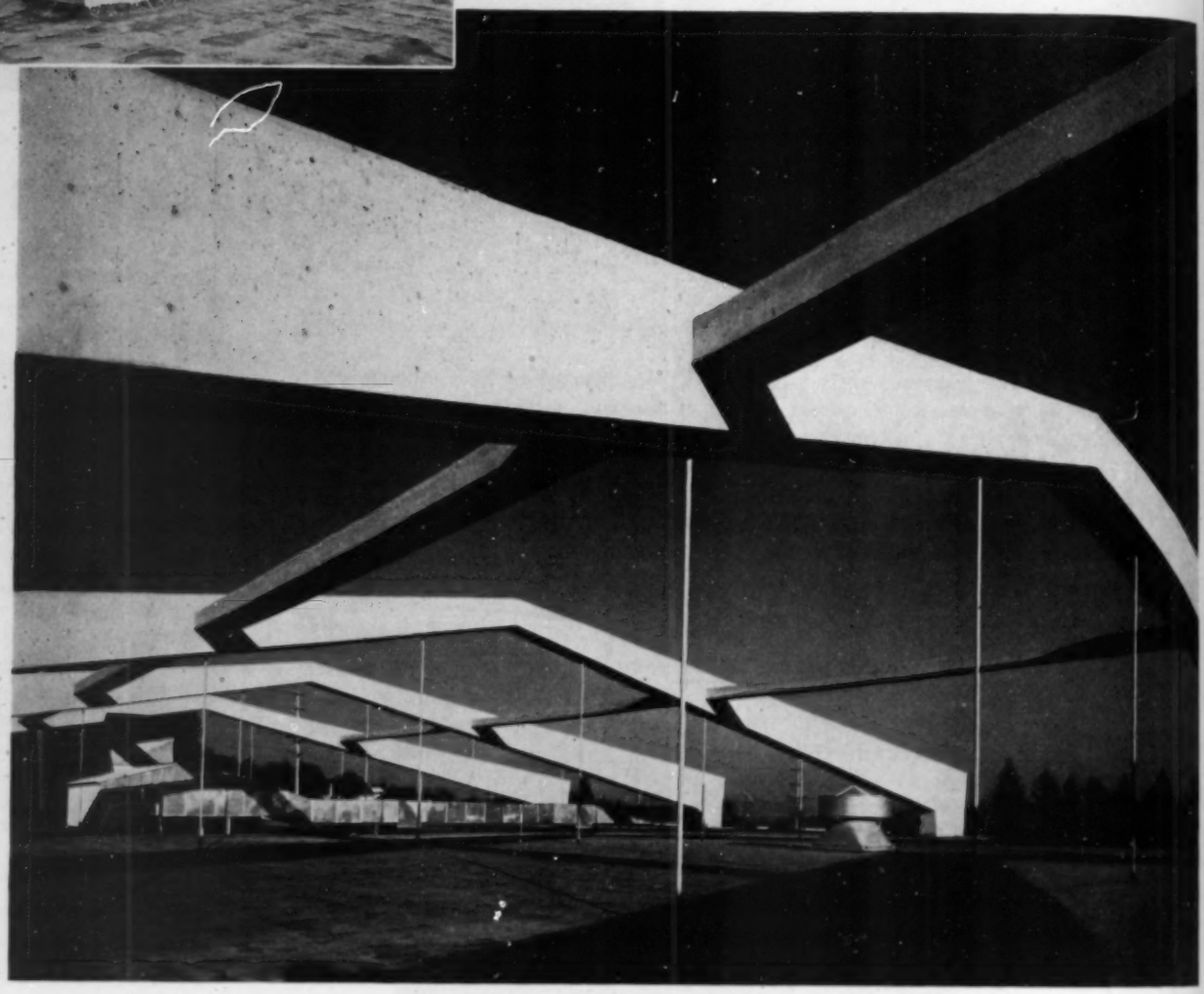
The designer neatly solved this problem by suspending the roof and ceiling from lightweight concrete frames. Trussed wood joists to which the roofing and ceiling are attached, hang from tie beams of the frames.

In describing the concrete frames, Mr. Poole says that the savings in steel



The vertical haunches of the concrete frames project down through the roof as shown in the inset. This simplifies the flashing and improves the appearance over an "A" frame

Art Commercial Studios Photos

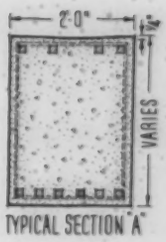


brought about by the light weight paid for the additional cost of the concrete above that of regular aggregate concrete. He reports that the simplified roof construction compensated for the additional cost of the concrete frames, so the overall cost was no more than with a conventional wood truss roof.

All concrete above the floor line is lightweight, using an expanded shale aggregate.

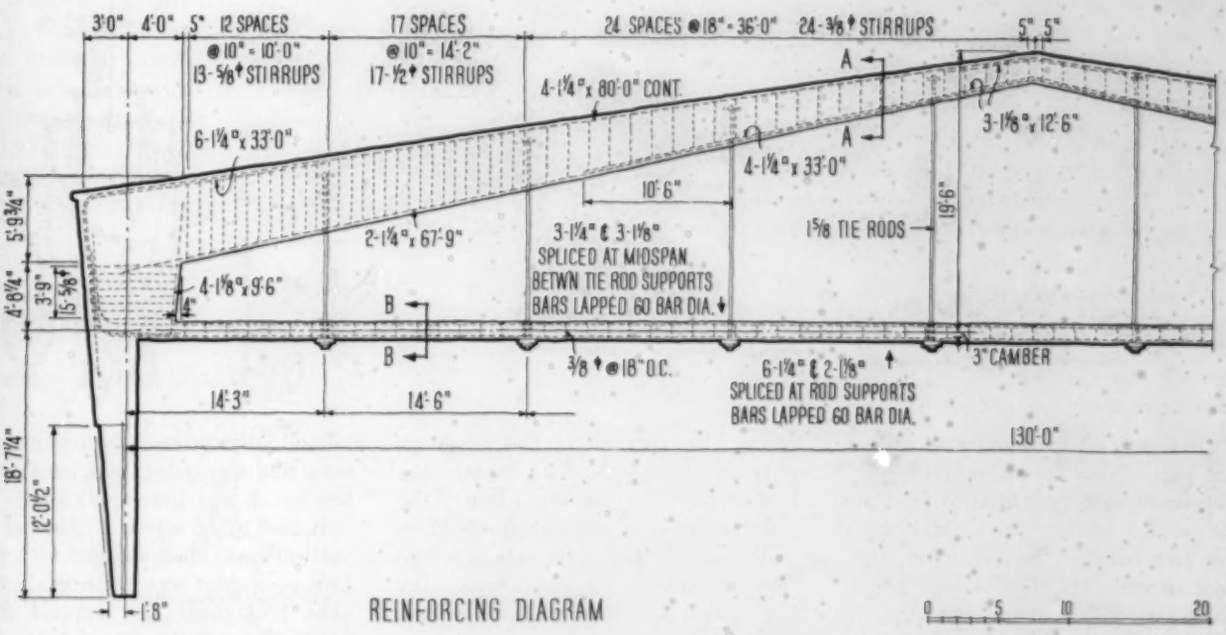
The roof support in areas not spanned by the five large frames consists of (1) concrete beams and trussed wood joists extending from the frames to the rear wall and (2) steel trusses and wood trusses extending from the frames to remaining exterior walls.

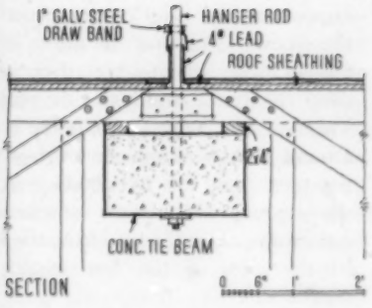
Below and right: drawings show location and amount of reinforcing in what is virtually a tied, 3-hinged frame. Flexibility of thin sections is assumed to provide hinging action. Concrete is lightweight, using expanded shale

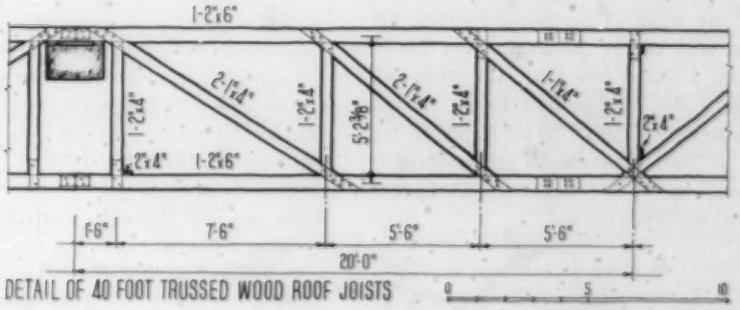


TYPICAL SECTION "A"

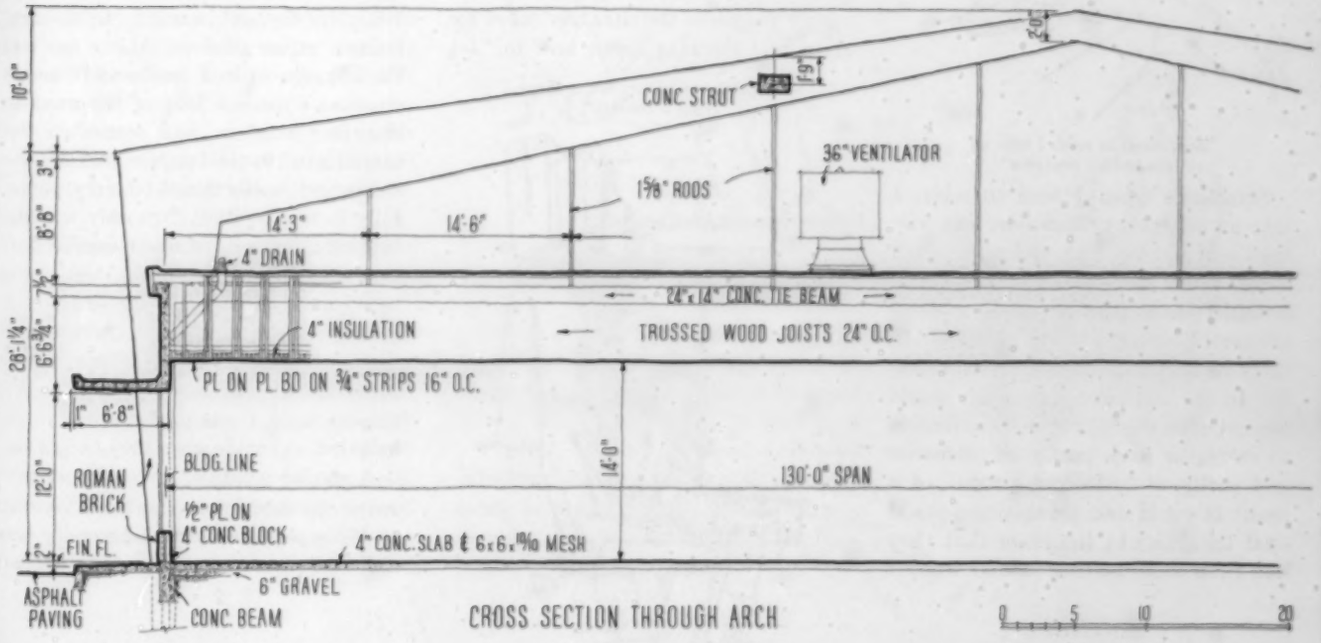
TYPICAL SECTION "B"







Above, left: flashing detail of hangar rod; roofing is built-up asbestos. Above right: typical wood truss; this one spans between concrete frames



THIS ENGINEER TRAVELS IN COMFORT

By Fred N. Severud

The author, well-known structural engineer, frequently takes the body for an analogy in explaining principles of structural design. Now, Mr. Severud tells how, in what he calls "sedentary cogitations," he has rested while traveling by applying these selfsame principles.

Sketches by Walker O. Cain

Did it ever occur to you what a great part of your life you spend sitting? Sometimes with very little to do. Why not use some of that time to think about how your body acts as a structure? The most amazing, thrilling, versatile structure on the whole earth.

We had a combined gardener and handy man working for us until a few years ago. He was married but stayed in his own room at our house most of the time and didn't go home very often. When I asked him why, he answered, "Oh, I don't know how to set around any more at home." So let us study the art of "setting around," particularly as it helps us broaden our understanding of structural principles.

"Sometimes to relax I take an unnecessary taxi ride"

Sometimes when I need to relax, I take an unnecessary taxi ride, lean way back and put my arm under the small of my back. You can see how uncomfortable this position would be without the arm. The torso would then have to carry its load as a beam from the shoulder to the buttocks. The torso would depend upon the back muscles in tension to carry the load, partly as catenaries and partly as "reinforcing rods" of a beam. It would soon get tired and would send telegrams to the brain that they had been unfairly treated and wanted relief. The arm alters this situation radically. An intermediary support has been added. The catenary action of the muscles has been almost entirely eliminated and the torso now acts as a continuous beam on very short spans. Try it sometime and you'll see what I mean. You can "set around" in that position for hours without getting tired.

Another approach involving different principles may best be illustrated by a little story. A few years ago I was visiting Iceland in connection with a projected government broadcasting station there. I timed my visit so that I would be able to hear my brother, Harald Saeverud, conduct some of his compositions on his fiftieth anniversary in Bergen, Norway.

Something went wrong with the reservations so I had to sit up all night on the train from Oslo to Bergen after having just spent a night on the plane from Iceland. I knew I would be called upon to give a few speeches in my half-forgotten native tongue so the situation called for some real thinking about how to "set around" during the night in order to get some rest. A crowded train, hard wooden benches; it was quite a problem.

"It gave passengers first a shock, then a chuckle"

It had to be solved within my own vertical space allotment and with whatever equipment was immediately available. If I could only get rid of my head! This relentless load bears down upon the vertebrae and adds to the "soil" pressure under the buttocks. Supporting the head on the arms with the elbows resting on the knees is only temporary relief. As you drop off to sleep the knees won't stay in position. This could be helped by binding a scarf around the two knees and tying them together, but the overloading at the sharp point of the elbow soon becomes unbearable. Also the load from the knees to the soles of the feet would give trouble.

No, the solution had to be more drastic than that. If only the weight of the head could be carried by some mechanical means outside of the body! With this thought in mind, the solution became rather obvious. Above me was the baggage rack. I had a scarf and a strap so I made a loop of the scarf to hang my head in, and connected the looped scarf to the baggage rack by the strap, and finally dozed off very peacefully in this position. Not only was the load off the head, but also a certain portion of the weight of the torso was taken away from the body so that all pressures were minimized. In addition to giving me a good night's sleep, it gave my fellow passengers first a shock, when they thought I was going to end it all, and then a chuckle when they caught on.

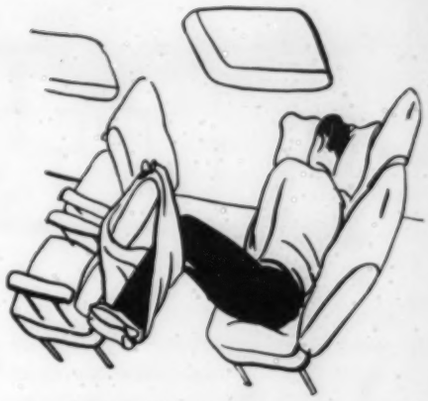
A similar solution, not quite so dramatic, resulted from a trip from Toronto to Winnipeg. Here again, necessity was the mother of invention. Due to bad

weather, the few hours' sleep that I had planned on catching at Toronto were gone, and I had to go on directly to Winnipeg after having been up all night. My lecture there was at 3 p.m., and the plane was due to arrive at two o'clock. On an airplane, the undignified solution that would be tolerated with amusement in a Norwegian coach would be very much out of place. So how then could I get rid of the weight of the head in a more dignified way? If not in tension, then why not in compression?

"The only compression member available was the removable arm"

The only compression member available was the removable arm separating the two seats. The adjacent seat was fortunately empty. I took the separating arm out, and, after a few trial-and-error experiments, slanted the arm so that a pillow placed on it would be level with the window sill and rest partly on the sill and partly on the separating arm. This carried the load of the head very nicely and mechanically to the floor of the plane. The torso had to be slanted as shown in the sketch, and this posed a secondary problem. This position would lift the left buttock off the seat and put too much concentration on the other. This was easily remedied by bunching up a blanket simulating a slanting chair bottom. A thick book or a briefcase would have done just as well. (Hint to commuters resting elbows on window sills.) In this position I had no trouble catching up on my sleep, and the lecture was at least better than it might have been.

I believe, however, that the most comfortable position that I have slept in on an airplane was on my first crossing of the Atlantic. There I had the advantage that not only was the adjacent seat vacant, but also the two seats ahead of me. Obviously, a horizontal position giving uniform support for the whole length of the body is by far the most restful. With my long legs this is not easy to obtain unless some additional supporting area is provided. With the



"The most comfortable position I have slept in on an airplane"

extra seats and the blankets available, this became a challenge. Obviously the blankets could be made to carry load if I only had some place to hang them from. The solution was simple enough, as shown in the sketch.

While we are on this subject, I'd like, as a matter of completeness, to wind up with an exploration of the possibilities of developing furniture which leans forward instead of backwards! It seems to me that it has been taken for granted that only by leaning backwards can a restful posture be obtained in a practical manner. Maybe so, but I should like to challenge it just to see what it leads to.

A practical illustration of the forward resting principle may be helpful in such a discussion. I've made myself a rather crude rest for the head and shoulder with this thought in mind. I made it to use in traveling, but I have been too

"A practical demonstration of the forward resting principle"

busy to refine it beyond its first crude stage. I have, however, clearly in mind how it can be rearranged to provide a very light, portable, compact unit with deflatable rubber pillows that could easily be taken along in travels for any distance. Let me first describe the contraption that I have made.

It consists of three pieces of wood nailed together as shown in the sketch, with a leg for ground support. By placing four pillows, two on the front projections to rest the head on and one under each shoulder on the rear projections, and bringing the load from the center table down to the ground through a single leg, a very restful posture is obtained. You have to experience it to find out just how restful and soothing it is. The leg should be so arranged on the center table that the weight of the head will tip the shoulder supports upward so that a slight stretching of the vertebrae will result.

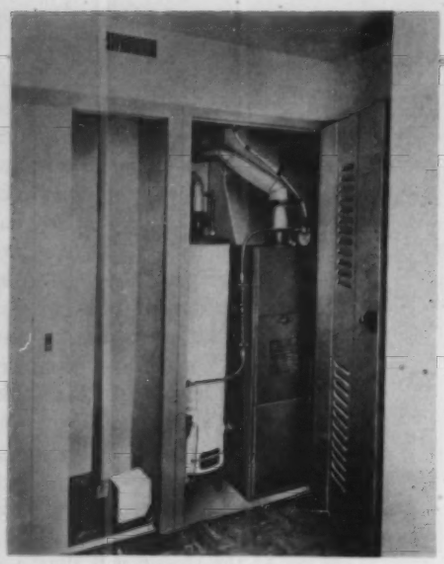
Looking at the sketch will show you how much of the body load is carried directly to the ground, freeing the vertebrae of most of the load and putting some of them under tension, which is a refreshing change from the relentless pressure they are normally under. Resting on this "front-chair" is one of the most relaxing experiences you have ever had. I feel certain that some of the principles employed in this front-chair may be very useful under certain circumstances.

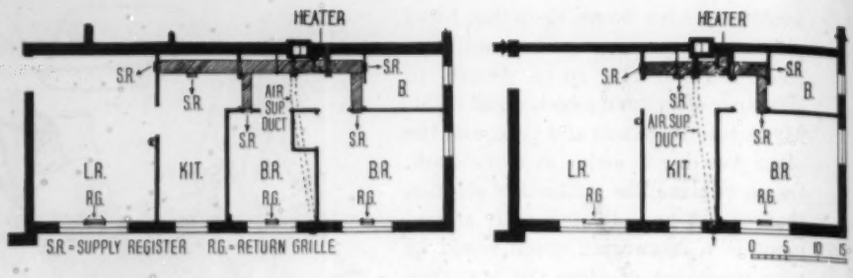
It may be that chairs can be made to sit in, either as back-chairs or front-chairs. Be that as it may, I think that it's high time that railroad and airplane companies study this whole situation from a fresh viewpoint so that "setting around" on a long trip can be a pleasure rather than the slow torture it now is.

The last sketch shows a more dignified and maybe a more practical travel aid. Again shoulders and head are mechanically supported, by-passing the vertebrae.

To conclude, then, giving a thought to your body as a structure is worth while in many ways. Try it.

"More dignified, and maybe a more practical travel aid"





Above: floor plans of the types of suites in Parkway Gardens apartments, Parma, Ohio, each of which has its own warm air furnace. Left: furnace occupies area only 16 by 23 in. and is housed in closet along with the hot water heater

EACH APARTMENT HAS A FURNACE

William H. Harris, Architect

Dwyer Construction Co., Builder

When completed this year, the Cleveland Parkway Gardens will contain a total of 1219 three- and four-room suites, each equipped with its own central-fired, automatic warm air system. Both installation and operating economy, as well as tenant-controlled comfort, were deciding factors.

Since each heating plant will be controlled by its own thermostat and served by its own gas line, piped through a meter assigned to the tenant, the tenant can use the heat just as he wants it. Management will make necessary repairs and take care of normal maintenance.

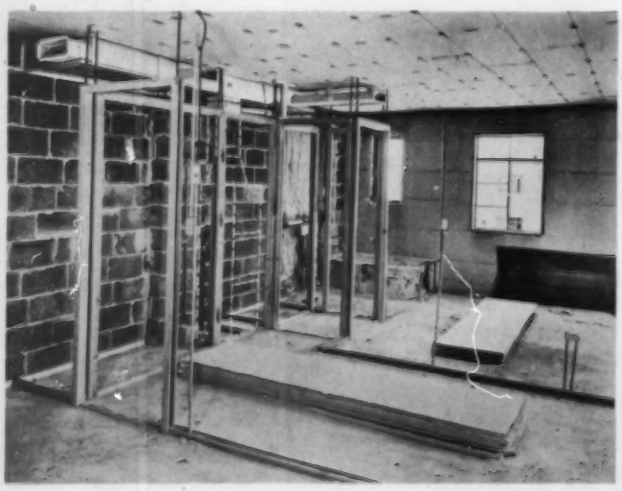
The 40,000 Btu input furnace for each apartment occupies only 16 by 23 in. of floor space, so it is easily housed in a small closet along with the water heater.

Ducts suspended from the ceiling joists distribute heat to registers located on the high side of the walls. Space between the concrete floor of the apartment above and the ceiling of the apartment below is used as a return air plenum for the upper apartment.

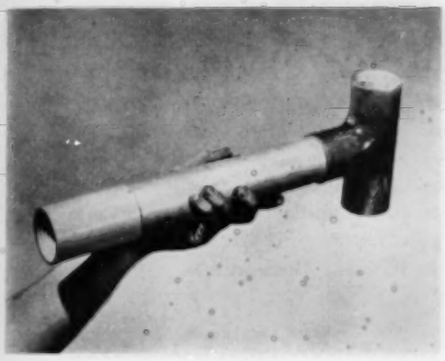
Combustion air for the furnace and water heater is brought from the outside of the building through a 5 in. duct. A grille cap protects the inlet.

Due to special emphasis on a simplified heating layout, it was possible to design the distribution system for shop fabrication and for time-saving installation.

Skeletonized layout shows air distribution. Furnace (by dashed outline) delivers warm air to rooms through plenum and ducts



In basement suites, return air is brought back to furnace through return grilles under windows which lead into vitreous clay pipe



Plastic pipe is made in a wide range of sizes, ranging from ⅛- to 12-in. A field installation of Carlon pipe is shown above, section of Glasweld below

Plastic Pipes

A wide variety of plastic materials is being adapted for the use of piping and tubing to carry liquids and gases — plastic piping of various attributes, sizes and colors. Industry had made great use of many types, both flexible and rigid, for their chemical resistance, light weight and ease of installation. They have been used in other fields for beer supply lines, gasoline lines, and to supply sea water to swimming pools.

Other recent applications have included domestic water supply lines for rural areas, pipes for gas, and for lawn sprinkler systems. The plastic chosen for each of these uses was picked because of particular characteristics (superior resistance to salt water, to certain soil conditions, etc.) which surpass those of more conventional materials. Continued development and increased production may eventually lead to more general use in the building and housing field as a replacement for critical metals. Some of the pipes currently on the market include:

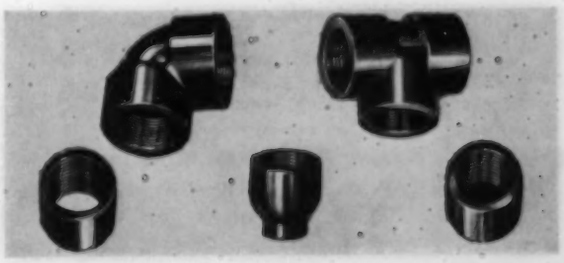
• *ACE Saran* pipe, tubing and fittings are said to have exceptional resistance to acids and other corrosive chemicals. They are especially recommended for the food and chemical processing industries. Actual uses have also included artesian well equipment, cold water drains on domestic refrigerators, gas fuel and vent lines, and domestic plumbing lines. The plastic is available in black only, and in moulded or extruded form. It has high impact strength. It may be threaded or heat welded at joints. Piping is made in ½- to 4-in. sizes, and in 10-ft lengths. A complete variety of fittings is available in sizes ½- to 2-in. Flexible tubing and flare-type fittings are stocked in ⅛- to ¾-in. sizes and in 25-ft min lengths. Valves are made in ½- to 1¼-in. sizes. American Hard Rubber Co., 11 Mercer St., New York 13, N. Y.

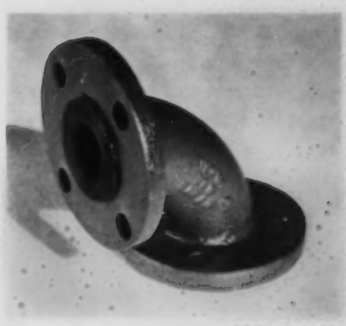
• *Mills-Plastic* pipe, tubing and fittings are also made of Saran. They have similar qualities and are made in the same range of sizes as ACE Saran. This plastic is durable, and has good insulating qualities. It is cut with ordinary saws. It weighs about one-fourth as much as metal pipe. Elmer E. Mills Corp., 2930 N. Ashland Ave., Chicago 13, Ill.

• *Dow Saran-Lined Steel Pipe*, fittings and valves are said to have overcome supporting and temperature problems by using Saran as a lining material. The temperature limitations are generally confined within the range of minus 40 F and plus 194 F. The pipes can be used with all acids, alkalies and salt solutions, with the exception of a few of the less well-known organic solvents. Sizes available are 1- to 6-in. inclusive, with a 10-ft max length. The pipe may be cut and threaded on standard equipment. Distributors for the Dow Chemical Co.: Saran Lined Pipe Co., 701 Stephenson Bldg., Detroit 2, Mich.

• *Glasweld* is a laminated tubing in which glass fibers in form of cloth, mat or tape are bonded with resins. It is made in two types: convolutely wrapped for structural tubing or piping; and

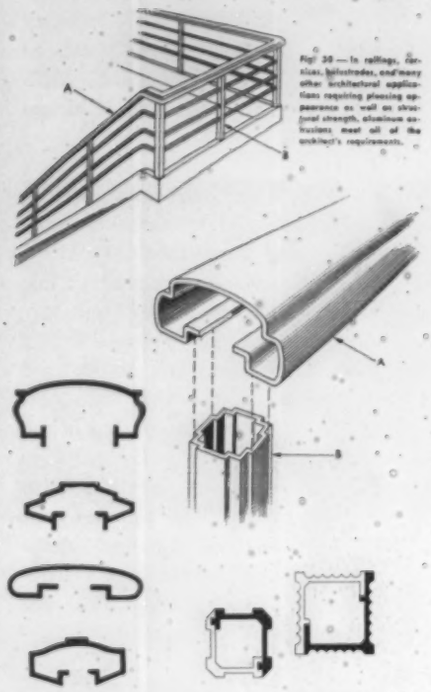
(*Continued on page 166*)





Plastic fittings of many types, shapes and sizes are available. The group above, left, is extruded of ACE-Saran by the American Hard Rubber Co. Above, right, is a Saran flange fitting made by the Elmer E. Mills Corp. Pipes and fittings are also made of conventional materials and lined with plastic, as in the Saran-lined steel flange at right, distributed by Saran-Lined Pipe Co.

MANUFACTURERS' LITERATURE



Typical shapes of extruded aluminum balustrades and posts. Page from the manual Designing With Aluminum Extrusions, published by Reynolds Metals Co.

Extrusions

Designing with Aluminum Extrusions. The book's function is to explain basic engineering principles that will aid the designer to use extruded aluminum shapes most effectively. Contents include features of aluminum design, examples of effective extrusion design, manufacturing possibilities, shape design from the manufacturing standpoint, structural design considerations, fits and assemblies for mating extruded shapes, joint design, dimensional tolerances, choice of alloy and temper, fabricating properties, finishes, cost factors, indexes of tables and illustrations by subject and an itemized cross index. Available when requested on company letterhead. 138 pp., illus. Reynolds Metals Co., 2500 So. Third St., Louisville, Ky.*

* *Other product information in Sweet's File, 1950.*

Concrete Forms

Masonite Concrete Form Presdwood. Folder gives a simplified short specification for the use of form board to produce smooth surfaced concrete. Features of the method are discussed. Details and photographs show construction of flat slabs, walls, beams and columns. Types, sizes and physical characteristics of the available form boards are noted. A deflection chart is also included. 4 pp., illus. Masonite Corp., 111 Washington St., Chicago, Ill.*

Waterproofing Brickwork

Omicron Mortarproofing For Tight Brick Walls. Booklet discusses the use of a special mortar admixture to obtain waterproof brick walls. Features of the "O. M." admixture are described. A number of comparative tests on mortar with and without the admixture are covered with tables and photographs. Common causes of cracks in mortar joints are noted. Many photographs of buildings constructed with "O. M." mortar are also included. 16 pp., illus. The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.*

Stainless Steel in Hospitals

Allegheny Metal in Hospitals. Booklet lists uses of stainless steel in the modern hospital in general, as well as in four specific departments (Service, Nursing, Surgical Departments, and Diagnostic and Treatment facilities). There is a four-page check list of stainless steel hospital applications. Summarized are the technology of the metal, its available forms and its fabrication. 34 pp., illus. Advertising Department, Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa.*

Electrical Wire Connectors

Solderless Connectors for Electrical Wiring. Bulletin No. 750. A pressure tool and fittings for solderless splicing and terminating electrical wires is described. Installation instructions and ordering information are included. 4 pp., illus. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J.

School Lighting

Guide To Lighting Educational Institutions. Booklet contains 34 lighting plans for school rooms, including areas for administration, teaching, research, sports, assembly and services. Photographs of the actual installations and sketches of the Holophane equipment used are given with each plan. Data are given on the watts per sq ft of floor area and the illumination levels as measured. There is also a brief and general section on principles of lighting. 52 pp., illus. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

Carpeting Fasteners

The Secret of Wall-To-Wall Carpet Beauty. Folder describes the Smooth-edge tackless carpet installation. The carpet grippers are illustrated by sketches and photographs. Notes are given for use with concrete and wood floors. Pictures of typical installations are also included. 4 pp., illus. The Roberts Co., 1536 N. Indiana St., Los Angeles 63, Calif.*

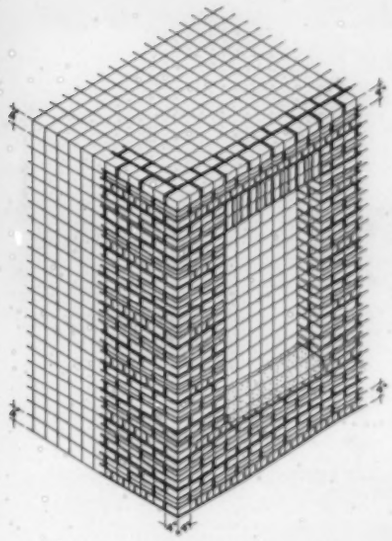
Aluminum Windows

Fleetlite Installation Suggestions. Folder describes an aluminum window which combines frame, sash, storm sash and screen in a single unit. Construction and operation of the window are discussed, and illustrated with many details. Installation details are included for constructions of brick veneer, concrete block, frame and solid masonry. A table of types and sizes of standard windows, and notes on rough openings required are also included. 6 pp., illus. Fleet Of America, Inc., 415 Dun Building, Buffalo, N. Y.

(*Continued on page 180*)

MODULAR COORDINATION: 4

Prepared with the cooperation of Structural Clay Products Institute

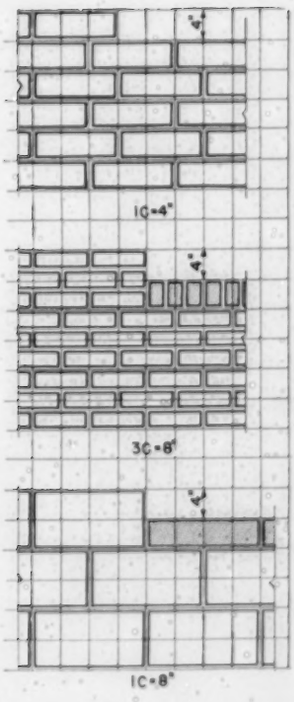


The three-dimensional grid (above) applies in all directions for openings

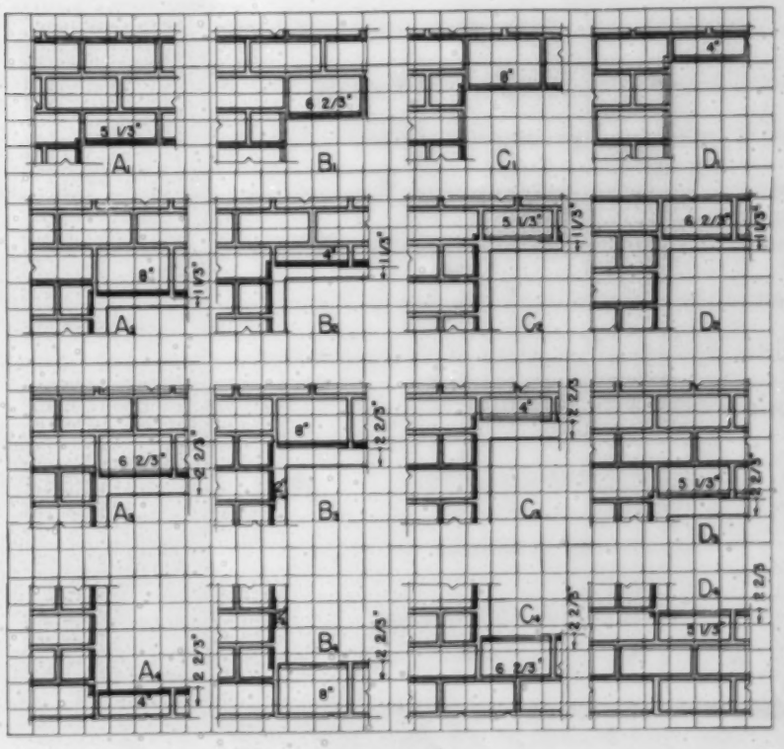
The preparation of working drawings, as well as preliminary drawings, is greatly simplified by the Modular Coordination system. Building layouts and elevations are drawn only to nominal dimensions. Actual dimensions needed on the job are given by assembly details. These are keyed to the layouts by reference to the 4-in. modular grid. With consistent grid placement, recurring details need be drawn only once. The same holds true for similar details, such as a series of windows, which vary in size by multiples of 4 in. The method also saves time in permitting change of specifications, and substitution of alternate materials for a detail, without redrawing the general layout sheets.

Opening details involve the coordination of many products — masonry facing and backup, windows, doors, trim, etc. Standard dimensions of masonry units manufactured for modular coordination are made in 4-in. multiples including half of a standardized joint thickness. This provides an interchangeability of parts to be selected. Non-modular-sized items require a specially worked out detail referencing them to the grid. Installation details are standardized by adopting a fixed difference between the size of the window and the nominal opening. The details should include sections through jamb, head and sill, as in the typical installation on Sheet 5. Each of these should show the edge of the nominal opening and the location adopted for the edge of the sash. This is generally taken as a minimum 2-in. surround to allow for window frames, heads and caulking spaces; a nominal space of 4 in. is left for sills. These details should also show the difference between the actual structural wall opening and the nominal opening.

Grid placement of jambs for openings should be similar on layouts, allowing a single detail to apply



Vertical flexibility for masonry openings is provided by 4-in. course height or by extra units



With 5⅓- by 12-in. structural tile units, four extra-sized units can be used to provide 4-in. flexibility for the height of openings. These are shown above for square heads, recessed heads (1⅓ and 2⅔ in.), and for sills

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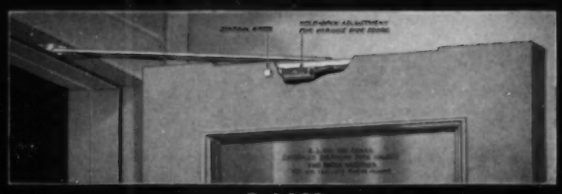
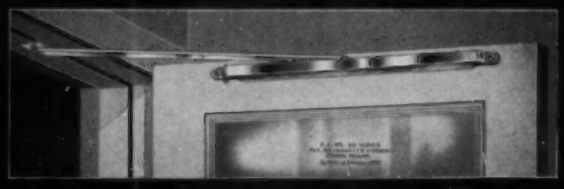
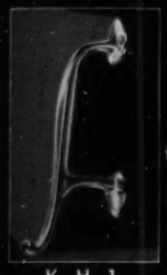


G-J 100
Concealed Overhead Door Holder



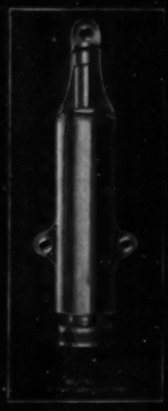
G-J 90
Surface Type Overhead Door Holder



K. H. 1
Arm Pull

Door Silencers
G-J 64 for Metal Frames
G-J 65 for Wood Frames

G-J F-9
Door Holder and Bumper



G-J 1150
Plunger Type Door Holder

G-J FB-13
Dome Type Door Bumper

G-J F-40
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MODULAR COORDINATION: 5

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to both sides. This need not hold true vertically, since the head and sill details are different. With flush jambs, when the exterior wall surface is on a grid line, jambs are normally on grid lines, and coincide with the grid opening, as in Detail A on Sheet 1 (November TSS). With jambs between grid lines, as in Detail B on the same sheet, the reference grid opening is 4 in. wider than the nominal masonry opening. With jambs recessed 2 in., the converse of the above is true. Because of this difference, the grid opening is often identified by a half arrow symbol.

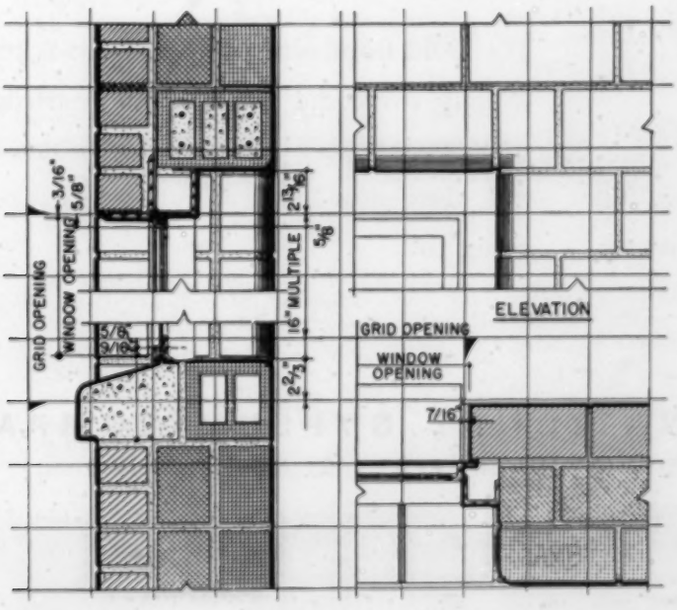
Flexibility in masonry wall and opening lengths and heights may be obtained by supplementary "closure" units at the openings or in the masonry field. (See details on Sheets 2 and 3, November TSS, and on Sheet 4 in this issue.) The masonry pattern can often be kept consistent by making wall lengths a multiple of ½ the nominal masonry unit dimension when laid in ½ bond, or ⅓ for ⅓ bond.

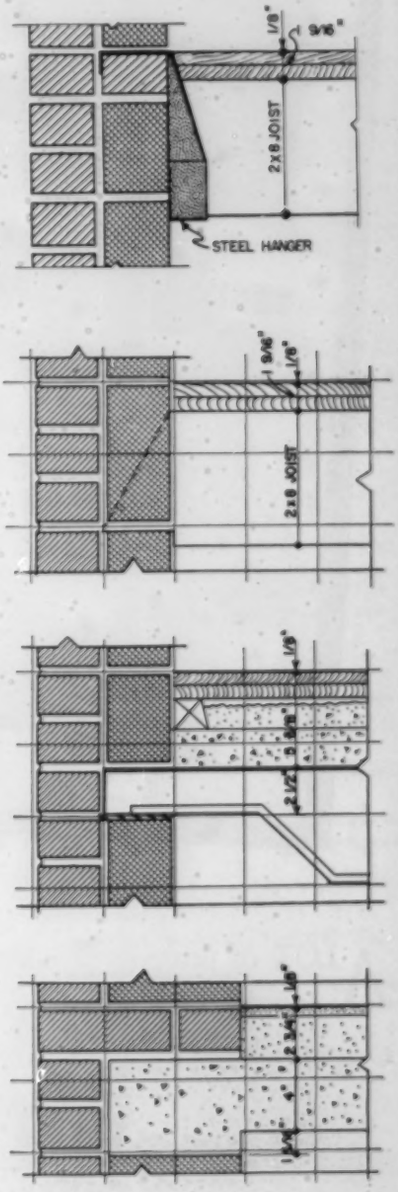
Floors vary in depth to meet structural requirements. Some portion, however, must be in a fixed relation to the grid. The A62 Guide recommends that the surface of finished floors be placed ⅛ in. below the grid line (see details at right), to coincide with masonry joints, and to maintain a constant relation between the floor and the masonry openings for exterior doors. For wood frame construction, it is suggested that wood sub floors be placed on the grid line. Necessary adjustments in the many items of interior finish and equipment can be made at the junction with the ceiling.

CONCRETE MASONRY UNITS

Nominal Sizes, Inches			
Full Size		Supplementary Sizes	
Height	Length	Height	Lengths
2⅔	8	2⅔	6, 4
3	8	3	6, 4
		2	8, 6, 4
4	12	4	10, 8, 6, 4
5⅓	12	5⅓	10, 8, 6, 4
		2⅔	12, 10, 8, 6, 4
		4	12, 10, 8, 6, 4
6	12	6	10, 8, 6, 4
		2	12, 10, 8, 6, 4
		4	12, 10, 8, 6, 4
8	12	8	10, 8, 6, 4
		4	12, 10, 8, 6, 4
8	16	8	12, 8, 4
		4	16, 12, 8, 4

For nominal sizes of brick and tile units, see sheets 2 and 3.





Left: typical modular details for a solid section metal window in a nominal 12-in. masonry wall. Above: typical modular floor details. These are, top to bottom: wood joist on steel hanger; wood joist notched to bear on masonry wall; steel bar joist with gypsum plank and wood screeds; and concrete slab formed down to bear on masonry course

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BUFFALO 2, NEW YORK

Fireproof Wallboards, Decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Rock Wool Insulation, Metal Lath and Sound Control Products.

BIBLIOGRAPHY OF STANDARD CODES AND SPECIFICATIONS: 5

Prepared by William Henry Deccy, A.I.A.

As a supplement to the previously published bibliography sheets, the first two columns on this page list additional professional and trade organizations which issue manuals and other data useful to architects. The last column is an addendum to the list of specifications and codes frequently cited: bold type numbers refer to address lists; other numbers are code designations for each particular standard or specification.

ORGANIZATIONS

A

44. Air Conditioning and Refrigeration Masonry Assn., 717 Southern Bldg., Washington, D. C., Executive Vice President.

45. American Society of Civil Engineers, 33 W. 39 St., New York, N. Y., Secretary.

46. American Society of Refrigeration Engineers, 37 W. 39 St., New York, N. Y., Secretary.

47. American Walnut Manufacturers Assn., 616 S. Michigan Ave., Chicago, Ill., Secretary.

48. Appalachian Hardwood Manufacturers, Inc., 414 Walnut St., Cincinnati, O., Secretary.

49. Associated General Contractors of America, Munsey Bldg., Washington, D. C., Managing Director.

C

50. California Redwood Assn., 405 Montgomery St., San Francisco, Calif., Executive Vice President.

51. Convector Manufacturers Assn., 40 W. 40 St., New York, N. Y., Secretary.

52. Hardwood Dimension Manufacturer's Assn., Inc., Heyburn Bldg., Louisville, Ky., Managing Director.

53. Hardwood Plywood Institute, 600 S. Michigan Ave., Chicago, Ill., Secretary.

M

54. Mahogany Assn., Inc., 75 E. Wacker Dr., Chicago, Ill., Secretary.

55. Maple Flooring Manufacturer's Assn., 332 S. Michigan Ave., Chicago, Ill., Secretary.

56. Metal Window Institute, 1427 Eye St., Washington, D. C., Technical Director.

N

57. National Lime Assn., 927–15th St., Washington, D. C., Secretary.

58. National Association of Fan Manufacturer's, 5–208 General Motors Bldg., Detroit, Mich., Secretary.

59. National Oak Flooring Manufacturer's Assn., 814 Sterick Bldg., Memphis, Tenn., Secretary.

60. National Retail Lumber Dealers Assn., 515 Union Trust Bldg., Washington, D. C., Secretary.

61. Northeastern Lumber Manufacturers Assn., 271 Madison Ave., New York, N. Y., Secretary.

62. Northern Hemlock and Hardwood Manufacturers Assn., Oshkosh, Wis., Secretary.

63. Northern Pine Manufacturers Assn., 4329 Oakland Ave., Minneapolis, Minn., Secretary.

O

64. Open Steel Flooring Institute, 903 American Bank Bldg., Pittsburgh, Pa., Secretary.

P

65. Plate Glass Manufacturers of America, 1211 First National Bank Bldg., Pittsburgh, Pa., Secretary.

66. Plywood Manufacturer's Institute, 205 W. Wacker Dr., Chicago, Ill., Secretary.

67. Propeller Fan Manufacturers Assn., 2–255 General Motors Bldg., Detroit, Mich., Secretary.

R

68. Red Cedar Shingle Bureau, 5508 White Bldg., Seattle, Wash., Manager.

S

69. Southern Cypress Manufacturer's Assn., Barnett National Bank Bldg., Jacksonville, Fla., Secretary.

70. Southern Hardwood Producers, Inc., 805 Sterick Bldg., Memphis, Tenn., Secretary.

71. Southern Pine Assn., Canal Bldg., New Orleans, La., Secretary.

72. Southern Plywood and Veneer, Inc., Johnson Bldg., Charlotte, N. C., Manager.

73. Steel Joist Institute, 201 N. Wells St., Chicago, Ill., Secretary.

74. Steel Kitchen Cabinet Institute, 74 Trinity Pl., New York, N. Y., Executive Secretary.

T

75. Tile Contractors Assn. of America, Investment Bldg., Washington, D. C., Executive Secretary.

V

76. The Veneer Association, 600 S. Michigan Ave., Chicago, Ill., Secretary.

W

77. West Coast Lumbermen's Assn., 1410 S. W. Morrison St., Portland, Ore., Secretary.

78. Western Pine Assn., 510 Yeon Bldg., Portland, Ore., Secretary.

STANDARDS

Amer. Inst. of Steel Const. (9)

Code of Standard Practice for Steel Bldgs. and Bridges (Rev. of Dec. 1, '46)

Spec. for the Design, Fabrication, and Erection of Structural Steel for Bldgs. (Rev. of June 1949)

Housing and Home Finance Agency (43)

Performance of Masonry Chimneys for Houses. (Technical Paper No. 13)

Modular Coordination — What is it? How does it work? Will it help reduce housing costs?

U. S. Department of Commerce Commercial Standards (27)

Blinds, venetian, wood (61–37 CS)

Calking, lead (94–41 CS)

Closet lining, aromatic red cedar (26–30 CS)

Convectors, steam and hot-water, method of testing and rating (140–47CS)

Doors (entrance) factory fitted, Douglas fir (91–41 CS)

Doors, pine (ponderosa) (120–48 CS)

Furnaces, forced air, solid-fuel-burning (109–44 CS)

Furnaces, gas, floor, gravity-circulating type (99–42 CS)

Furnaces, oil burning, floor (equipped with vaporizing pot-type burners) (113–44 CS)

Hardwood wall paneling (74–39 CS)

Hardwood Plywood (35–49 CS)

Insulating Board, structural fibre (42–49 CS)

Insulation, wood fibre blanket (160–49 CS)

Mineral wood products, all types testing and reporting (131–46 CS)

Pipe, bituminized-fibre; drain and sewer (116–44 CS)

Plumbing Fixtures, enameled cast iron (77–48 CS)

Plumbing Fixtures, formed metal enameled sanitary ware (144–47 CS)

Shingles, wood (31–38 CS)

Tiles, wall, polystrene plastic, and adhesives for application (168–50 CS)

Veneers; walnut (64–37 CS)

National Bureau of Standards Simplified Practice Recommendations (27)

Aggregates, coarse (crushed stone, gravel and slag) (163–48 SPR)

Asbestos paper and asbestos millboard (19–37 SPR)

Conductors, copper (for building purposes) (180–41 SPR)

Doors, kalamein frames and trim (83–28 SPR)

Partitions (metal) for toilets and showers (101–40 SPR)

Heating a great

The formal opening of Our Lady of Lourdes Hospital on July 1, 1950, signalized the completion of a $4 million project which is the last word in hospital construction and equipment.

Steam was selected for the heating of this great institution—steam harnessed and brought under control with a Webster Moderator System of Steam Heating. An Outdoor Thermostat adjusts the supply of steam with every change in temperature. Prevents wasteful overheating. Maintains comfort conditions during mild weather or on the severest winter day.

Our Lady of Lourdes Hospital, Camden, N. J.
At left: corner of a typical semi-private room.

New Hospital

Webster System Radiators, taking no useable room space, were engineered into sanitary enclosures integrated with the window construction. Metal front provides easy access if necessary. Each convector has a built-in radiator trap and valve, permitting 100% heat shut-off—no dampers are needed.

Operation of the institution is under the direction of the Sisters of the Third Order Regular of St. Francis. Included in the Hospital is the Bishop's suite and a chapel seating 250.

An important factor in the success of Webster Heating installations is the friendly service and close cooperation of the authorized Webster Factory Representative. Call him or write us for his name.

Address Dept. AR-12

WARREN WEBSTER & CO., Camden 5, N. J.

Representatives in Principal Cities

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WEBSTER
MODERATOR
SYSTEM
OF STEAM HEATING
"Controlled by the weather"

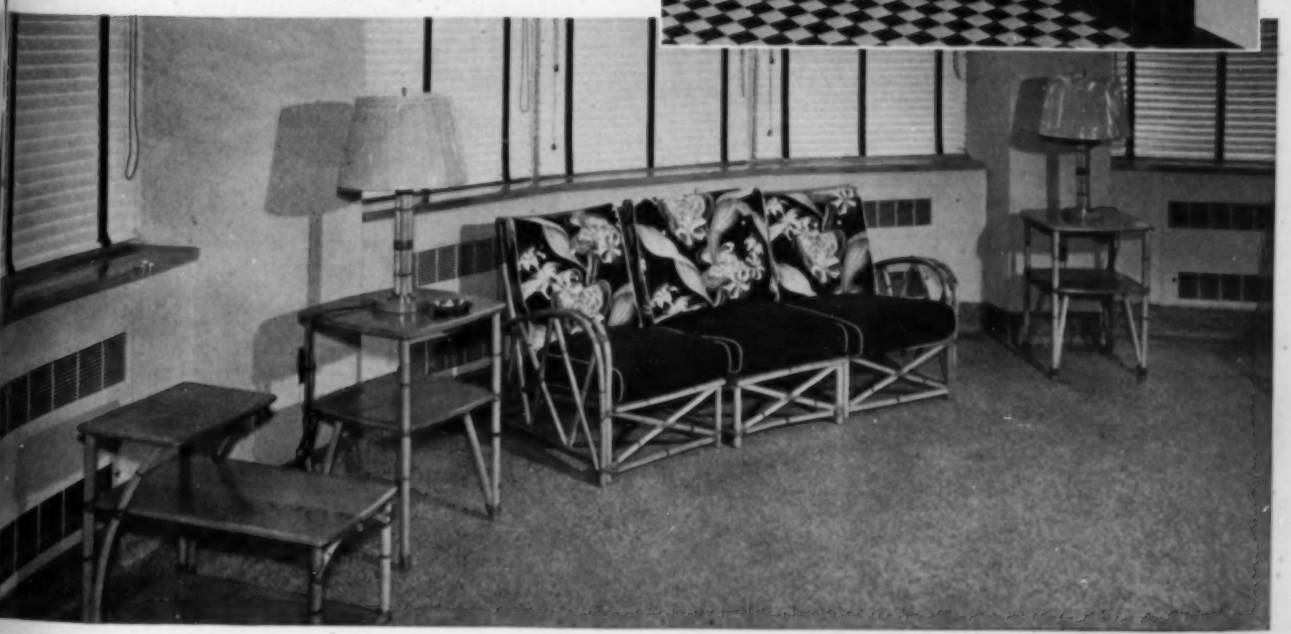
ARCHITECT:
Paul C. Reilly, New York.

BUILDER:
George A. Fuller Company, New York.

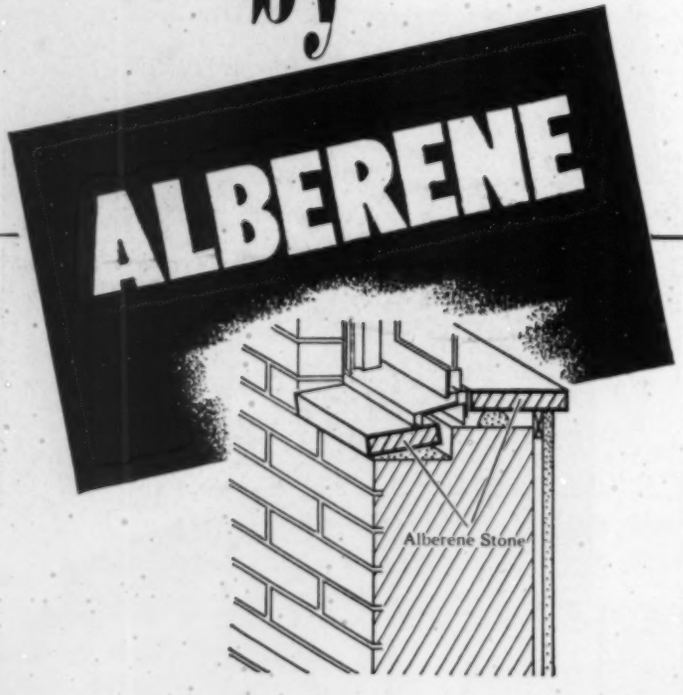
CONSULTING ENGINEER:
Sears & Kopf, New York.

HEATING CONTRACTOR:
Daniel J. Keating Co., Philadelphia.

Chief Engineer A. D. Bradley uses master key for heat shut-off at individual radiators. Shown at bottom of page is one of 14 solariums.



window sills and stools by



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- They're free of maintenance costs — for all time.

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PRODUCTS

(*Continued from page 155*)

spirally wrapped for piping. The products are claimed to have the strength of steel, to be rust- and corrosionproof, and to have good electrical insulating qualities. It has high impact resistance, and may be used in temperature ranges from minus 60 F to plus 275 F. It has been used as piping in oil and chemical processing industries, and as tubing for building, electrical and allied fields. It is also suited to outdoor and marine uses. It is made in sizes from ¼- to 6-in. when convolutely wrapped, and to 12-in. when spirally wrapped. The maximum length is 30 ft. Fittings are made from 1- to 6-in. ID. It can be supplied in a wide range of colors. Joints are made by threading, plastic flanges, or tapered joint sections. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.

• *Carlon Plastic Pipe* is another type, which is claimed to be durable, light in weight, and guaranteed against rot, rust and electrolytic corrosion. It can be used for drinking water and drainage systems, ventilating and cooling lines, wiring conduit. It is made in a flexible type, with diameters to 6-in., lengths to 400-ft, and in rigid type in 20-ft lengths and diameters to 8-in. Carter Products Corp., 10403 Meech Ave., Cleveland 5, Ohio.

Overhead Unit Heater

The *Norman Three-Sixty Overhead Forced Convection Heater* combines heat distribution in a 360 degree radius with forced exhaust. This is claimed to equal-

Round convector heats in all directions

(*Continued on page 168*)

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

"Low Impedance BUS DUCT for the Long Run"

"We've found Westinghouse low impedance bus duct to be ideal for long transmission runs in a plant," say Mr. R.W. Holicky, Chief Engineer, and Mr. W. F. Nock, Field Supervisor, of the Doan Electric Company in Cleveland. "It's easy to handle and no trouble at all to hook up."

Let bus duct answer *your* secondary power distribution problems—whether you're building or expanding. Low impedance bus duct provides required voltage right out to the end of your system . . . keeps lights, motors, and other equipment functioning at top efficiency. In addition, it packs greater carrying capacity into a smaller space than either conduit or wire. And bus duct means reduced maintenance.

Completely pre-fabricated sections can be installed up out of the way of plant traffic—quickly and easily. What's more, the sections can be disassembled immediately and rushed to new locations with no wiring mess to unravel.

Ask your Westinghouse representative for the facts on dollar and space-saving bus duct. Descriptive bulletin B-4271 contains further information. Westinghouse Electric Corporation. P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30042

Westinghouse

BUS DUCT

Where should glazing compound be specified?

. . . as you probably know there is often a fine decision as to whether to specify putty or glazing compound. In all D-P Putties you will find only the finest ingredients used and these will be faultlessly compounded, but there are always limitations even in the application of the best putties. Some of the most common reasons for selection of D-P glazing compound rather than D-P Putty are outlined briefly below:

ANSWER: In brief, Glazing Compounds should be specified where severe vibration conditions are encountered or where longer lasting service is required or where low maintenance cost is desired as detailed below:

First: D-P Glazing Compounds are elastic. They set, but remain permanently elastic so as to expand and contract with bonding surfaces in temperature extremes. They also have better working qualities in all temperatures above 35° F.

Second: Because D-P Glazing Compounds remain elastic they stand severe conditions such as heavy moisture and extreme vibration. For example: you would specify a D-P Compound for application in buildings or factories where heavy machinery vibrates the building or where the buildings are near heavy-travelled railroad tracks. Laundries, bakeries and canneries are also buildings requiring a glazing compound.

Third: Where low maintenance is required D-P Glazing Compounds should also be specified. These glazing materials reduce replacement cost by facilitating the cleaning of sash after lights are broken. D-P Glazing Compounds also last longer than most putties since they are permanently plastic and stick tight for years. Always specify D-P Glazing Compounds for the finest, longest lasting job under the above mentioned conditions and for easy application and lowest maintenance on any job anywhere.

CHECK THE ABOVE VITAL GLAZING DETAILS WHEN YOU SPECIFY AND ALWAYS PLAY SAFE

DEMAND D-P BRANDS

- NO. 1012 ALUMINUM GRAY GLAZING COMPOUND
- D-P INDUSTRIAL TYPES OF GLAZING COMPOUNDS FOR STEEL OR WOOD SASH
- COMPLETE LINE OF PUTTIES FOR WOOD AND METAL SASH . . . FED SPECS. AND SPECIAL USE
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Makers of Quality Putty Products Since 1867

DAYTON, OHIO • Alexandria, Va. • Atlanta, Ga.

Architectural Engineering

PRODUCTS

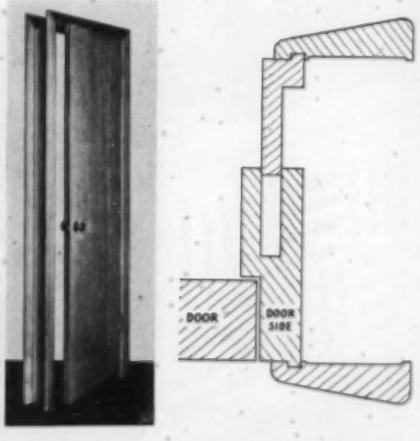
(*Continued from page 166*)

ize temperature throughout the room, and to establish constant air motion within low acceptable velocity limits.

The unit has a shallow depth to allow head room in low ceilinged areas. The sides are fitted with seven diffuser rings. The return air intake is in the bottom of the unit. The burner is of the single-port, self-piloting type. Controls include a shut-off safety pilot, diaphragm gas valve, fan and limit control. The heater is finished in green crackled enamel with metal trim, and has a ⅙ h.p. ballbearing type motor. The low velocity impeller is said to give quiet air distribution. Norman Products Co., 1150 Chesapeake Ave., Columbus 12, Ohio.

Adjustable Prefabricated Door

The *Redi-Dor*, a prefabricated door and jamb unit, is designed to eliminate sawing, fitting and hanging on the job. The units are made in two sections for installation after walls are completely finished. One part, with a pre-hung door, is set into one side of the wall; the other



Two-section door frame is installed in finished walls, adjusts to wall thickness

part is set on the opposite side. The two sections slide together, and adjust to any wall thickness. A special clamp is used to secure the door while in transit,

(*Continued on page 170*)

Vacant Lot *Today...*

Hospital *Tomorrow*

When *Speed* is the Need...

Use CECO Open-Web Steel Joists

One day you pass a new building in the making—ground is broken—foundations are in. Then, in just a short, short time, where once there was a vacant lot, there stands a gleaming hospital, spick-and-span new. Chances are it was constructed with Open-Web Steel Joists, for that's the fastest way ever to build. There's no temporary formwork necessary . . . nothing to take down later on. Open-Web Steel Joists are self-centering . . . are placed on the wall structure and right away rib lath can be laid and concrete poured to form the floor. And while all this is going on, other building trades can be on the job doing their special work such as installing steel windows, plumbing and heating. So, when speed gets the call, specify CECO OPEN-WEB STEEL JOISTS. They are fabricated to exact size, come to the job tagged, ready to install . . . provide low cost fire resistive structures. Ceco assures you fast service from five plants: Birmingham, Chicago, Houston, New York and Wheeling, W. Va.

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CECO STEEL ®

In construction products **CECO ENGINEERING** *makes the big difference*

PRODUCTS

(*Continued from page 168*)

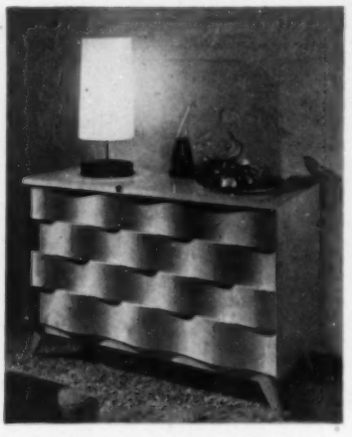
and to hold the frame in line with the door during installation. The method is claimed to save from 3 to 5 hours of installation time per door.

The doors are 6 ft 8 in. high and 1⅜ in. thick. Widths run from 18 to 32 in. in 2 in. intervals. Widths of 34 and 36 in. are available on special order. The units may be obtained in a variety of woods, door and trim styles, and with a choice of hardware for different uses. Wm. R. Lutze Co., 18 Bergen St., Brooklyn, N. Y.

Swedish-American Furniture

An excellent new line of chests and tables is the result of collaboration by American designers and Swedish craftsmen. The 40 pieces which make up the line were designed by Edmond J. Spence for The Walpole Co., Inc. The furniture is manufactured in Sweden by 16 factories, each of which specializes in a particular type of furniture construction. The prices are comparable to American-made furniture of like quality.

Well designed chests have fine construction, may be used singly or in groups



The pieces are made of Swedish birch, in pale or medium blond finishes. Several have inlay strips of birch in contrasting grain, or of sycamore wood. Hardware has been eliminated on some of the units; others are fitted with specially designed Swedish-made pulls. Items in the line include dressers, cabinets, desks, dining tables, and many types of coffee, lamp and occasional tables. The Walpole Co., Inc., 524 W. 43rd St., New York, N. Y.

Decorated Tiles

An exhibit of ceramic tile fireplace facings and wall coverings by Warner Prins, held at the Architectural League of New York, featured one-of-a-kind tiles in contemporary designs and textured effects. The designs were executed in a painted underglaze, with a wide variety of color combinations and techniques. Motifs included abstract shapes, floral patterns, pictorial scenes, figures, and caricatures.

Repeat tiles, which were more subdued in color and emphasized all-over textured effects, also were shown. All

(*Continued on page 172*)

MEN'S BAR, CINCINNATI CLUB

more revenue from space with Van-built equipment

● Many hotels and clubs are looking for more profit. That's what makes this experience of the Cincinnati Club so interesting. They transformed a service kitchen into a high revenue department . . . the above-illustrated new men's bar. Also with Van's help they increased their banquet capacity by 1200 seats.

● If you are planning food service improvements to make your clients' cash registers ring oftener, make full use of Van's century-accumulated skill. Ask for Van's book showing illustrations of installations like Van made recently at the Cincinnati Club.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

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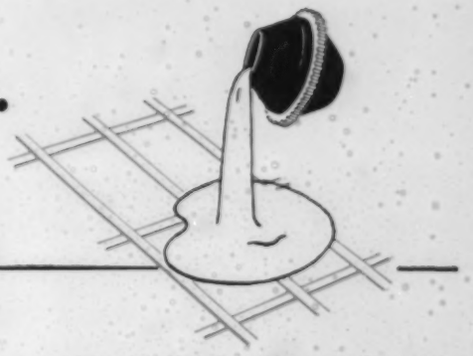
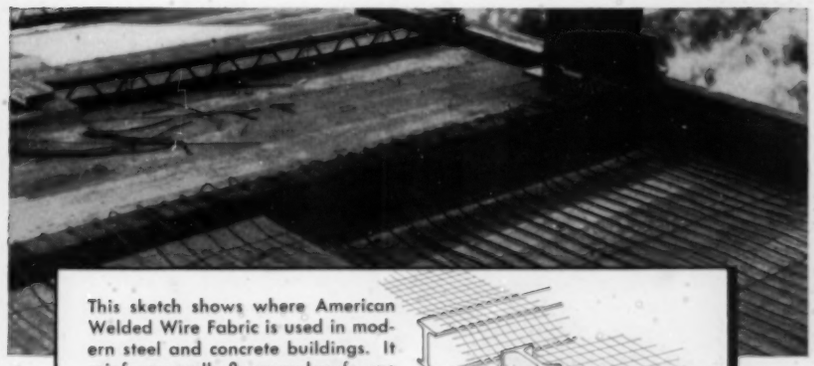
429 CULVERT STREET **CINCINNATI 2, OHIO**

For steel and concrete buildings...

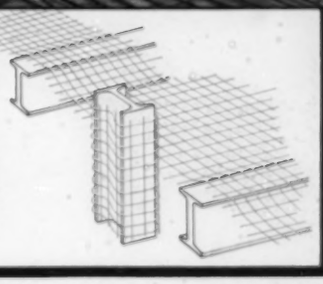
American Welded Wire Fabric



This apartment building is typical of modern steel and concrete construction. In floors, walls and ceilings, on beams, girders and columns, the continuous reinforcement of American Welded Wire Fabric keeps concrete in place, prevents cracking, helps strengthen structural members.



This sketch shows where American Welded Wire Fabric is used in modern steel and concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular shapes are made practical by American Welded Wire Fabric reinforcement.



AMERICAN Welded Wire Fabric reinforcement has been used extensively in building construction. Wrapped around structural steel members, it fortifies the concrete against cracks caused by stresses and strains due to deflection of the structural members, normal temperature changes, and extraordinary temperature variations accompanying fire.

This fabric reinforcement possesses adequate tensile strength. It is easily shaped to structural steel. It comes in rolls and sheets, aids speedy construction. Structural steel beams, when wrapped with Welded Wire Fabric and enclosed in concrete fireproofing, are usually designed as composite beams.

Its adaptability, efficiency and economy have made American Welded Wire Fabric the most widely used reinforcement for concrete. You will find it in floors, walls, roofs and ceilings of all sorts of structures, in highways, sidewalks and driveways, in tunnels, bridges and approaches.

U·S·S American Welded Wire Fabric is available in every locality from jobbers' and dealers' stocks — supplemented by prompt mill shipment to identified projects.

When you are planning any kind of concrete construction, our technical staff will be glad to supply complete data on specific designs and standard styles of fabric. Write to our nearest sales office today, you incur no obligation.

AMERICAN STEEL & WIRE COMPANY
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COLUMBIA STEEL COMPANY, SAN FRANCISCO
PACIFIC COAST DISTRIBUTORS

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BIRMINGHAM, SOUTHERN DISTRIBUTORS

UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Every type of concrete construction needs

AMERICAN WELDED WIRE FABRIC

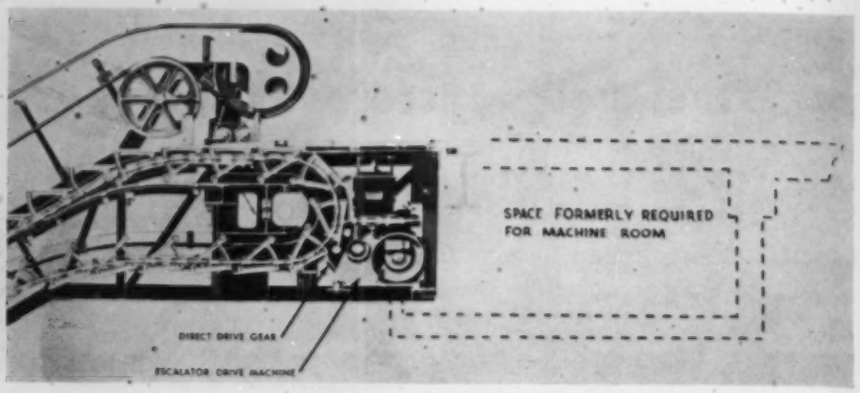
reinforcement

USS TRADE MARK

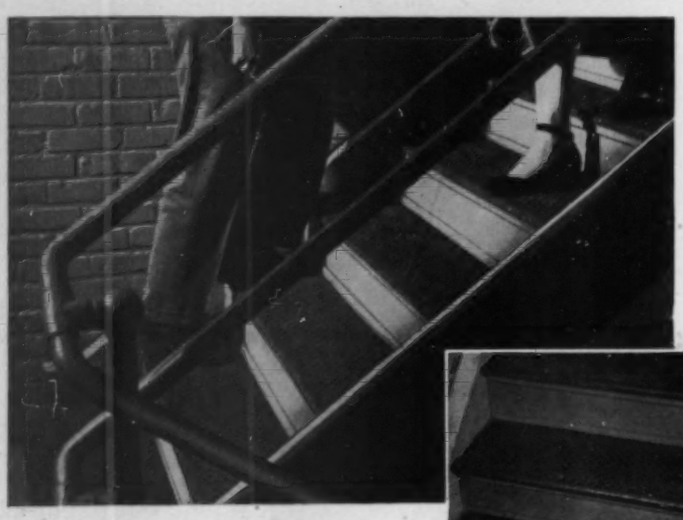
UNITED STATES STEEL

PRODUCTS
(*Continued from page 170*)

the tiles are washable and impervious to smoke and other stains. Suggested uses for the tiles included table tops, inserts and murals. The one-of-a-kind and repeat tiles come in a wide range of prices. Any original design desired can be obtained on special commission. Walter Prins, 36 E. 22nd St., New York 10, N. Y.



Drive machine fabricated in escalator-truss eliminates need for separate machine room



Feralun Safety Treads installed in 1923, in office of RCA Victor Division, Camden, N. J. (Courtesy Public Relations Department, RCA Victor).

FERALUN
SAFETY TREADS

"INSTALLED IN *1923*... STILL GIVING SATISFACTORY SERVICE TODAY"

They planned well for safety and for durability—those who were responsible for these Feralun* safety treads—installed when this RCA Victor building was erected in 1923. A quarter century of resistance to wear under the many thousands of feet that have gone up and down them since Calvin Coolidge first entered the White House! A quarter century of underfoot safety, too, on Feralun's non-slip surface! And, as the photograph shows, these same treads can still be counted on for many more years of maintenance-free service—and safety.

Examples like this show why architects, engineers and builders insist on "Feralun" treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, "Feralun" provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on "Feralun." Send it today.

**Also available in Bronze*—(Bronzalun), *Aluminum*—(Alumalun), *and Nickel Bronze*—(Nicalun).®

AMERICAN ABRASIVE METALS CO.
IRVINGTON 11, N. J.

AMERICAN ABRASIVE METALS CO.
470 COIT STREET
IRVINGTON 11, N. J.

(AR 12-50)
Gentlemen: Please send me full information on Feralun.
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....

Escalators

A new packaged 48-in. wide escalator, called the *Free-Flow*, has been introduced by the Otis Elevator Co. to supplement its previous line of packaged and special made units. The unit will accommodate two adults riding side by side on the same step, and will transport 8000 persons per hour. The new escalator brings out the economies of the previous, narrower, 32R unit; placement of the driving machine in the truss of the escalator eliminates the machine room formerly required with large-capacity units. This gives considerable saving in costs by permitting the driving mechanism to be mass produced and factory assembled, and by reducing building costs and alterations.

Design and engineering features are also similar to the 32-in. wide model, including an aluminum track system, rubber rollers for noise reduction and pinch-proof handrails. Variable rises are available, up to a 23 ft maximum. Otis Elevator Co., 670 Fifth Ave., New York 19, N. Y.

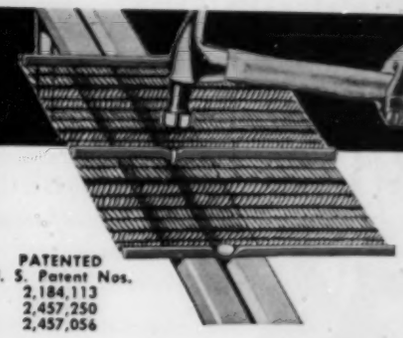
TV Master Antenna System

The *Jerrold Mul-TV System* is said to make it possible to operate 400 television sets, or more, from a single antenna. Picture and sound quality are said to be excellent. There is no interference between sets. The master system is designed for use in apartment houses and hotels.

The system has separate directional antennas, one for each station. All are usually mounted on the same mast. They are cut to correct length for each channel and connected by separate lead-ins to a master control amplifier unit. This unit includes 6-tube plug-in channel amplifier strips for each channel and provides a booster for the signal. There are separate gain controls for

(*Continued on page 174*)

THIS Is Why-



PATENTED
U. S. Patent Nos.
2,184,113
2,457,250
2,457,056

ALSO AVAILABLE IS THE MACOMBER DOUBLE V JOIST WITH NAILABLE STEEL BOTTOM CHORD FOR ATTACHING ANY CEILING MATERIAL.

YOU'LL FIND THE MACOMBER TAG ON THE MAJORITY OF JOBS TODAY

NAILING top lath to Macomber V Bar Joists is faster than any other method.

Slab centering solidly anchored prevents deep pockets of wasted concrete between joists.

Design information for spans, 4 to 40 feet in Joist Catalog.

TO SAVE YOU MONEY

SERVICE IN STEEL
STANDARDIZED
CONSTRUCTION
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CANTON, OHIO

IN CANADA, SARNIA BRIDGE CO., LIMITED, SARNIA, ONT.
IN MEXICO D. F.—MACOMBER DE MEXICO S. A. CEDRO 500

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

IT COSTS MONEY TO "HANG" A WINDOW WASHER!

Extra insurance is passed on to owner. Maintenance costs go up . . . investment profits go down.

BOTH SIDES of the

Sealuxe BROWNE

"Folding-Flue" Windows

clean from the INSIDE!

Other SEALUXE-BROWNE values . .

- 100% controllable, draft-free ventilation. When slightly bowed, a vertical V-flue lets fresh air in and foul air out without drafts.
- Force fit against resilient wool felt shuts out dirt, dust, wind, water and traffic noises. Laboratory tested.
- Stream-lined to let in more light; set off any architectural treatment.
- Fold at finger-tip pressure. Stay put under normal wind pressure.
- No metal-to-masonry contact. Resist tarnish, rust and corrosion.

Employers Casualty Bldg. George L. Dahl, Arch. Dallas, Texas

BROWNE Windows throughout. SEALUXE—Engineered Spandrels. Heavy, extruded aluminum SEALUXE Pilasters conceal air conditioning ducts, water and gas pipes and electrical conduits.

OTHER SEALUXE PRODUCTS

WINDOWS—Picture, Store Front, Commercial and Monumental Casement, Thermo (insulated) • SOLAR CONTROLS—Fins, Canopies, Shades, Louvres • BUILDING ACCESSORIES—Pilasters, Spandrels, Fascias, Trim • ENTRANCE ACCESSORIES—Building Directories, etc. • DOOR ACCESSORIES • CROWD CONTROL EQUIPMENT. For more information you are invited to clip and mail coupon below or see our catalog in Sweet's Architectural File.

SEALUXE-Engineered Products are Miracles in Metals!

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DISTRICT SALES OFFICES, AGENTS AND DISTRIBUTORS IN ALL ARCHITECTURAL CENTERS . . .

Architectural Engineering

PRODUCTS

(*Continued from page 172*)

each station to balance signal strengths. An output network mixes the amplified signals and feeds them through antenna distribution outlets to any desired number of receivers. The system will accommodate TV sets of any make or model. Jerrold Electronics Corp., 121 N. Broad St., Philadelphia 7, Pa.

Prefabricated Plastic Skylights

A lightweight, prefabricated skylight, called *Wascolite*, utilizes a Plexiglas dome attached to a simple copper frame to eliminate cross members and wire reinforcements. The unit is neat and simple in exterior appearance; from the interior, nothing is visible but the opening. The skylights are said to be strong, shatterproof and watertight. The plastic

Plastic skylight installed in roof simplifies daylighting of interior spaces

is claimed to have approximately double the insulating qualities of glass the same thickness. Three types of plastic are available: one admits ultra violet rays, one absorbs them, the other is white translucent for light diffusion.

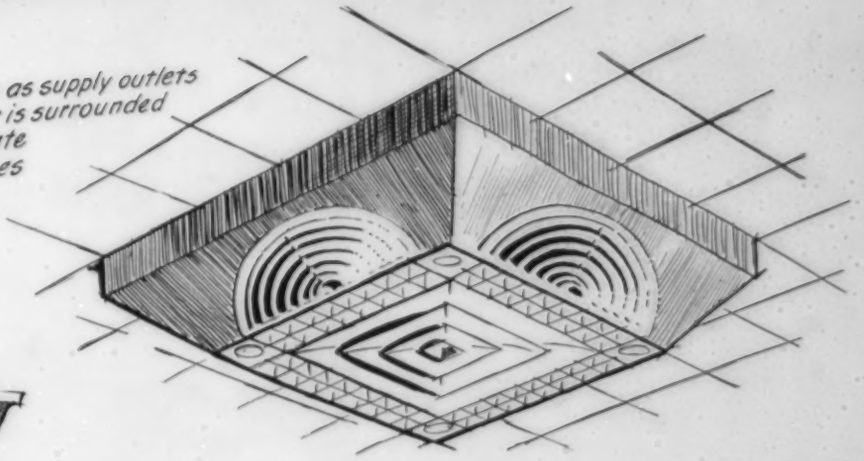
The frame is said to be easy to install. Louvers or ventilators may be fitted in the side. Units are available in ten sizes, ranging from 20 by 20 in. to 100 by 100 in. Wasco Flashing Co., 268 Elm St., Cambridge, Mass.

Diffuser and Light Combination

The *Agitair Diffuser-lite Fixtures* combine air diffusing vanes and a light fixture in a single unit. The ceiling fixtures

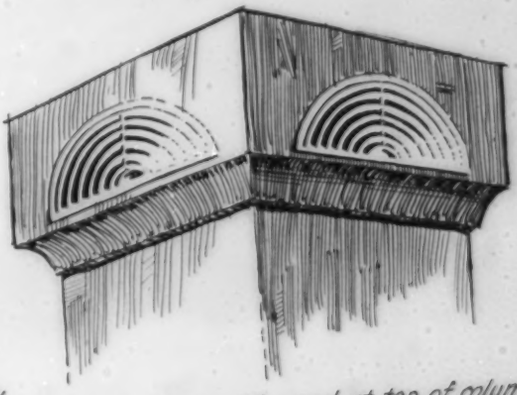
(*Continued on page 176*)

ideas for using ANEMOSTAT AIR DIFFUSERS



Type W Anemostats as supply outlets Type E for return air is surrounded by narrow egg crate fluorescent fixtures

Two Type W's at side of procenium arch for auditorium or theatre installation



Remember – pattern control can easily be obtained with standard Anemostat Air Diffusers

Type W's used at top of column which conceals air duct

Anemostat Air Diffusers offer unlimited design possibilities. They can be used in regular, acoustical and egg crate ceilings . . . combined with all types of lighting fixtures . . . in commercial, industrial and home applications. Anemostat Air Diffusers provide uniform diffusion throughout the entire conditioned area. They eliminate harmful drafts, stale air pockets and equalize temperature and humidity. New Selection Manual contains complete application and specification data. Write for your copy.

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DRAFTLESS *Aspirating* AIR DIFFUSERS

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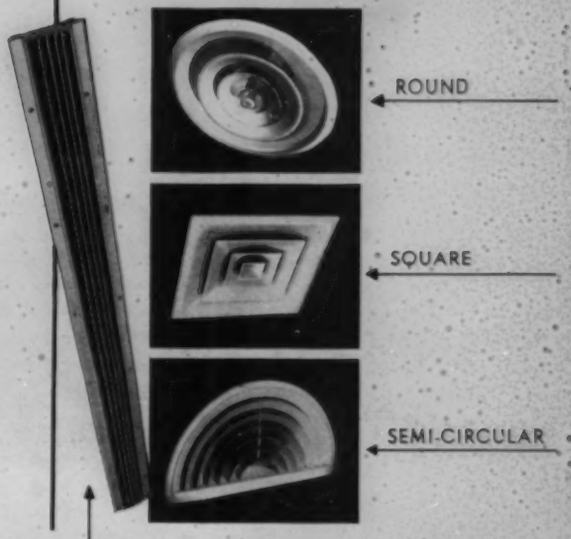
REPRESENTATIVES IN PRINCIPAL CITIES

ANEMOSTAT offers maximum design possibilities because only Anemostat Air Diffusers come in all these shapes



AC 126

You'll have fewer headaches if you specify MICHAELS Products and then make sure your Contractors buy them direct from Michaels

It's to your advantage not only to specify Michaels building products, but to see that contractors buy direct from Michaels. You deal with a reliable concern, in business since 1870, and well known for its ability to produce high-quality products, to faithfully execute your most exacting specifications, and to meet delivery commitments. Michaels building products of stainless steel, aluminum, bronze and other metals have earned an enviable reputation among architects and builders. And in most instances, it costs no more to use Michaels. So why not buy direct?

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Bank Screens and Partitions	Lamp Standards	Kick and Push Plates
Welded Bronze Doors	Marquises	Push Bars
Elevator Doors	Teblets and Signs	Cast Thresholds
Store Fronts	Name Plates	Extruded Thresholds
Lettering	Astragals (adjustable)	MI-CO Parking Meters
Stair Railings	Grilles and Wickets	Museum Trophy Cases
Check Desks (standing and wall)	Wrought and Cast Radiator Grilles	

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

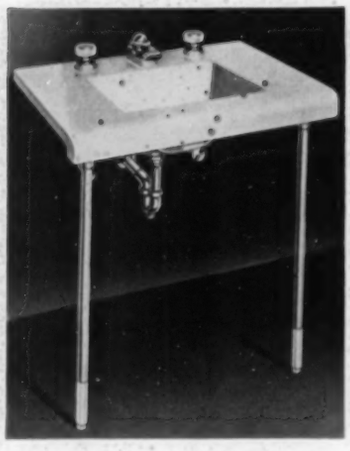
PRODUCTS

(*Continued from page 174*)

are available in either square or rectangular shapes, and incorporate incandescent or fluorescent lighting with flush, semi-flush or louvered lenses. Frames are hinged for relamping and maintenance. The units are constructed of light gage steel and finished in baked aluminum lacquer or prime coat for painting. Recessed boxes are steel, lined with asbestos heat insulation and equipped with reflectors. The units are available in a variety of sizes. Air Devices Inc., 17 E. 42nd St., New York 17, N. Y.

Lavatory

The *Crane Criterion* lavatory features a flat surface, and a rolled front edge for installation in tiled counters. The unit is of vitreous china, and measures 30 by 22 in. The basin is 16¼ by 12¼ in. All



Trimly styled lavatory may be built into counter top or mounted on legs as shown

exposed trim and metal parts are finished in brushed chrome. Handles are of clear lucite. The unit may also be obtained with legs of chromium-plated tubes with lucite bases. The overflow is concealed in the front of the basin to leave the back smooth. The lavatories are available in white or any of eight colors. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

(*Continued on page 178*)

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PRESIDENT

July 20, 1950

Libbey-Owens-Ford Glass Company
122 Mutual Building
Richmond, 19, Virginia

Gentlemen:

Accuracy is of utmost importance in the rebuilding of automotive engines, so when we contemplated erection of our new building, we determined to do everything possible to contribute to this end. We knew from past experience that good lighting, without glare, was necessary. We also knew that the comfort of our employees, especially during the hot summer months, would contribute to efficiency.

After a careful study of a number of types of glass installations and discussions with other plant managers, we selected Blue Ridge Frosted Hammered Aklo Glass for the entire South wall of our new building.

Having recently completed a year in our new building, we are highly satisfied with this installation. Our entire working area is well lighted and eye-strain is practically eliminated due to the glare-reducing properties of the Frosted Aklo Glass. Working space adjacent to the window area is utilized fully without eye discomfort even on the brightest days. Further, we have been able to keep our workmen more comfortable through reduction of heat from the direct sun during the hot months due to the heat-absorbing properties of Aklo.

As a result of our experience, we are pleased to recommend the use of Blue Ridge Frosted Hammered Aklo Glass for installation where good lighting, comfort and efficiency are of paramount importance.

Very truly yours,

RICHMOND AUTO PARTS INC.

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H. B. Truslow
President

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Why not look into this . . . Our book on reduction of sun glare and heat is FREE.

Blue Ridge Sales Division
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Please send me a copy of your book on glare and heat reduction, "Filtered Daylight".

Name_____

Company_____

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BLUE RIDGE GLASS CORP. RINGSPORT, TENN. QUALITY GLASS

BLUE RIDGE AKLO GLASS

Heat Absorbing • Glare Reducing • Figured and Wire Glass

LOF GLASS

They can sit closer...
in comfort
with WOOD WINDOW UNITS!

No cold flows into this room from the muntins and mullions of these double-hung windows. No heat seethes out from them in summer. For these windows are made of *wood*—the natural insulating material that does so much to help control indoor climate.

Double-hung wood window units today are available with a scientific preservative treatment to give greater resistance against stain, decay, insect attack or humidity. They won't rust or corrode—are efficiently weatherstripped. And remember, they are available as pre-assembled units with modern sash balances—and in a wide variety of styles.

WOOD WINDOW INFORMATION SERVICE
38 South Dearborn Street
Chicago 3, Illinois

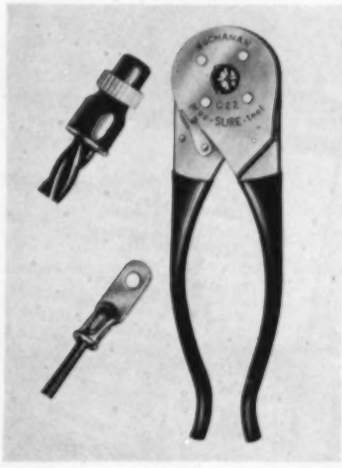
See your local lumber dealer for wood window units

PRODUCTS

(*Continued from page 176*)

Solderless Connectors For Electrical Wiring

The *Buchanan pres-SURE-connectors* are designed to eliminate soldering and to save time in splicing and terminating electrical wires. A special hand operated crimping tool is used to install the connectors. It measures one pound, is 8 in. long, and has handles protected with vinyl tubing.



Connector and terminal (left) are easily fixed to wiring by device shown at right

The splice caps have an open-end construction for "pigtail" splicing, and are made of copper for good electrical conductivity. Two sizes are made to accommodate the most frequently used combinations of stranded and solid wires. To install, the unit is crimped in place, and the wires are cut flush with the cap. Snap-on plastic insulators eliminate the need for taping of joints.

Copper terminal lugs are available with ring, spade or locking tongues, and for a wide range of wire sizes. They are simply crimped in place over single or multiple wire ends. Installations of both types of connectors are claimed to be permanent and to require no maintenance. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J.

Residential Commercial, or Industrial..

SQUARE D CIRCUIT BREAKERS MAKE SENSE IN ANY SET OF "SPECS"

Circuit breakers eliminate fuses. They provide *repeat* protection. There is nothing to burn out . . . nothing to replace. Anyone can quickly restore service after the fault is eliminated. They offer the most in *convenience*, *safety*, *compactness*, and *appearance*. Equally important, more circuits can be added easily when required. Yet circuit breakers cost little more than fusible equipment.

Square D Circuit Breakers are THERMAL-(*Coilless*) MAGNETIC. *Thermal* element deflects in proportion to temperature of wire insulation resulting from both surrounding air and losses within the conductor. *Magnetic* element responds instantly to heavy overloads or shorts. *BOTH ARE NEEDED FOR COMPLETE PROTECTION!*

THERE IS A SQUARE D CIRCUIT BREAKER TO MEET EVERY REQUIREMENT . . . EXACTLY

ALSO INDUSTRIAL BREAKERS, PANELBOARDS, SWITCHBOARDS AND DUCT

Write **for Bulletins SA 590 and SA 583, Square D Company, 6060 Rivard Street, Detroit 11, Michigan**

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SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

LITERATURE

(*Continued from page 156*)

Metal Windows

Sealuxe Engineering Products for Metal-Glass and Solarized Buildings (*Catalog No. 25*). Describes a line of windows and sun-control shades and fins for all-metal-and-glass buildings. Among the items covered are: folding flue windows, thermo-vista windows, ventilating picture windows, solar shades, weather controls, cellular spandrels and fascias. Features, photographs, specifications and details are given for each item. 24 pp., illus. Universal Corp., 6710 Denton Drive, Dallas 9, Texas.

Lightweight Masonry Units

Waylite, The Modern Lightweight Masonry Unit. Booklet describes features and physical characteristics of lightweight-aggregate building blocks. The various sizes and shapes available in standard units are illustrated, along with a number of construction details. Data are given on units for ceilings, floors, back-up walls and partitions. Typical interior and exterior finishes are also pictured. 16 pp., illus. The Waylite Co., P.O. Box 30, Bethlehem, Pa.

Welding

Recommended Practices for Resistance Welding. Manual includes welding schedules for spot and seam welding mild and medium carbon steels, low-alloy steels, stainless steels, nickel, Monel, Inconel and magnesium alloys. Recommended practices are given for projection welding low-carbon and stainless steels. Flash welding data are provided for low and medium forging strength steels. A section is included on methods of testing resistance and seam welds, and for the control of resistance weld quality. Many tables and details are given. 60 pp., illus. Price $1.00. The American Welding Society, 33 W. 39th St., New York 18, N. Y.

Vertical Conveyor

Standard Recordlift (*Bulletin No. 150*). Describes an automatic vertical lift conveyor designed to distribute mail, records, files and general office supplies in institutions and large office buildings. Illustrations are included of typical installations, along with pictures of other types of conveyors made by the same manufacturer. 4 pp., illus. Standard Conveyor Co., Dept. AR, North St. Paul 9, Minn.

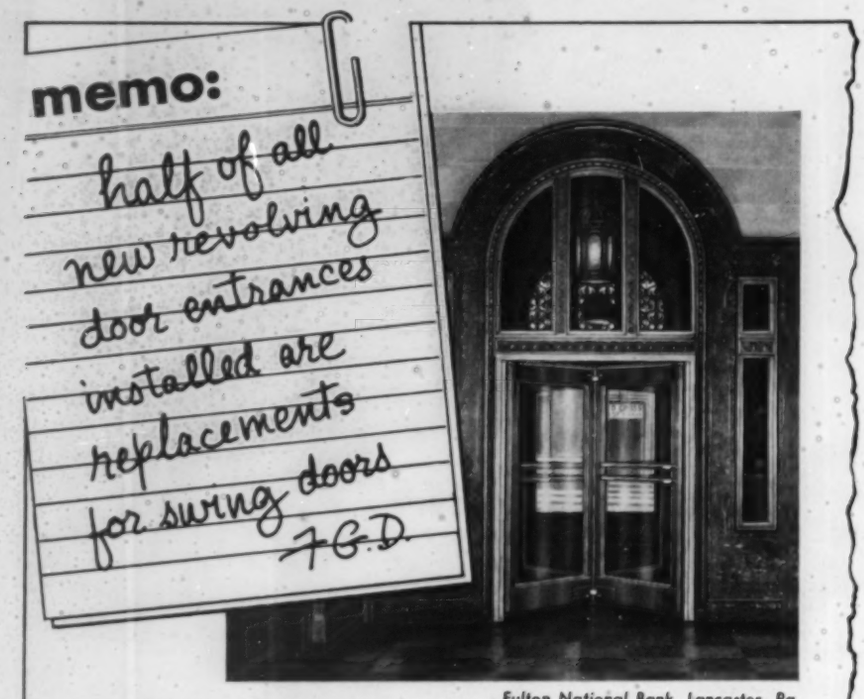
Plastics

A Simplified Guide to Bakelite and Vinylite Plastics and Resins. Booklet classifies fourteen types of plastics, including the various forms of Bakelite phenolic, styrene, polyethylene and Vinylite plastics and resins. General characteristics and properties are described for each form. Typical applications and uses of each material are noted and illustrated. 24 pp., illus. Bakelite Div., Union Carbide and Carbon Corp., 300 Madison Ave., New York 17, N. Y.*

Wallboard

Masonite Hardboards. Pamphlet presents various types of wallboard. Physical properties, specifications (exterior and interior), applications, cutting and bending, adhesives and nailing, and methods of finishing are included. 23 pp., illus. Masonite Corp., 111 West Washington St., Chicago 2, Ill.*

(*Continued on page 182*)



Fulton National Bank, Lancaster, Pa.

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REVOLVING DOORS REPLACE SWING DOORS

Day after day — unsatisfactory experiences with swing door entrances convince store owners, bankers, hotel managers, and other businessmen that they must have revolving doors.
That is why the majority of all new revolving door installations are replacements for swing doors. And — the majority of all revolving doors installed are International-Van Kannel. Avoid replacement wastes — specify revolving doors in your original plans.

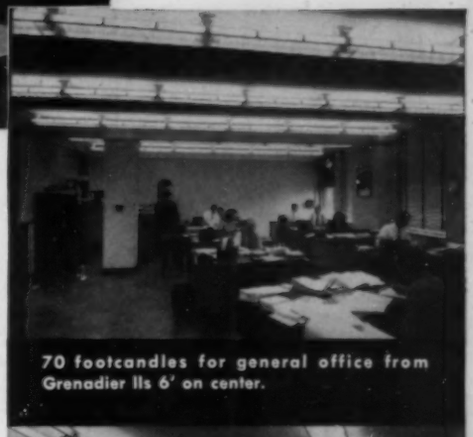
FOR INFORMATION see the Yellow Pages under Doors, Revolving, or our catalog in Sweet's.

REVOLVING DOORS
INTERNATIONAL-VAN KANNEL
1806 EDGAR STREET EVANSVILLE 7, IND.

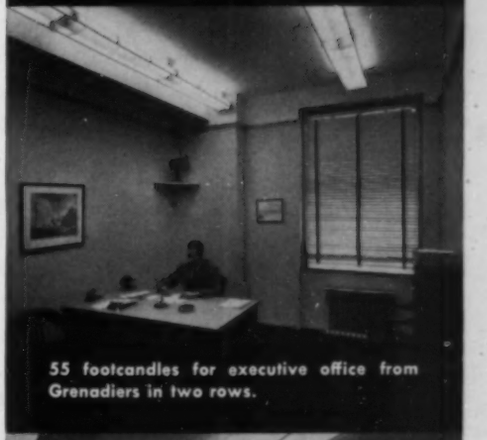
IN CANADA — International-Van Kannel revolving doors are available through Eastern Steel Products, Ltd., in Toronto and Montreal.

71 ARCHITECTURAL RECORD

65 footcandles in accounting office from Grenadier IIs 6' on centers.



70 footcandles for general office from Grenadier IIs 6' on center.



55 footcandles for executive office from Grenadiers in two rows.

75 footcandles for mimeo room from Grenadiers with 5'6" spacing.

Here's Why *Wakefield* Grenadiers were chosen for the offices of this wide-awake company

Because ruggedly-built Grenadiers provide abundant light that diffuses pleasantly from white enameled louvers and plastic side panels, achieving excellent illumination levels and low brightness contrasts.

Because Wakefield fixtures are easy to install—can be hung by one man. Sections hook securely to a pre-installed strap, then channel covers, lamps, louvers and side panels go up in turn. In addition to making installations easier, this assembly method is a permanent aid to maintenance.

Wakefield Grenadiers are available for use with two or four 40W bipin or Slimline lamps. See our insert in Sweet's Architectural File.

THE F. W. WAKEFIELD BRASS COMPANY • VERMILION, OHIO

Wakefield

Over-ALL Lighting

GRENADIER STAR COMMODORE WAKEFIELD CEILING

LITERATURE
(*Continued from page 180*)

Home Heating

How To Plan Home Heating. Booklet presents a line of heating systems. Features of warm air heating are discussed in a section directed principally to home owners. A check list gives methods of achieving more economical and efficient operation of furnaces. A simplified method of estimating heat loss is included, along with tables and diagrams. 19 pp., illus. The Meyer Furnace Co., Peoria 2, Ill.

Library Lighting

Recommended Practice of Library Lighting. Booklet, prepared by a technical committee of the Illuminating Engineering Society, discusses various phases of library lighting. Among the items analyzed are: the seeing tasks involved, the environment, use of daylighting and lighting fixtures, and the eyesight conditions of visitors. Recommendations are given for lighting reading rooms and book storage areas, along with general data on types of lighting systems and a comparison of filament and fluorescent light sources. Notes are included on brightness ratios and texture and color of finishes. 16 pp., illus. Price 50 cents. Publications Office, Illuminating Engineering Society, 51 Madison Ave., New York 10, N. Y.

Kitchen Equipment

The World's Newest Kitchen Ideas. Booklet features the Youngstown line of kitchen fixtures and equipment. Sinks, waste disposers, dishwashers and steel storage units are the principal items covered. Each unit is illustrated and described. Notes on kitchen planning and "practical household hints" are included. 24 pp., illus. Mullins Manufacturing Corp., Warren, Ohio.*

Interiors

Colorama. Clara Dudley Color-Idea Book. Booklet presents color photographs of many new rug and carpeting samples currently on the market. Also, an interior decorating service is prescribed, and five examples of before-and-after rooms are shown in full color. 24 pp., illus. Price 25 cents. Alexander Smith & Sons Carpet Co., 295 Fifth Ave., New York 16, N. Y.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Maurey Lee Allen, Architect, Zuelke Bldg., Appleton, Wis.

John Bucinskas, Draftsman, 1618 Harman, Baltimore 30, Md.

Arthur H. Bush, Student, 19 Lowell St., Cambridge 38, Mass.

Leo A. Daly Company, 1726 Ambassador Bldg., St. Louis 1, Mo.

E. C. Dimling, Operations and Store Planning Representative, Associate Merchandising Corp., 1440 Broadway, New York 18, N. Y.

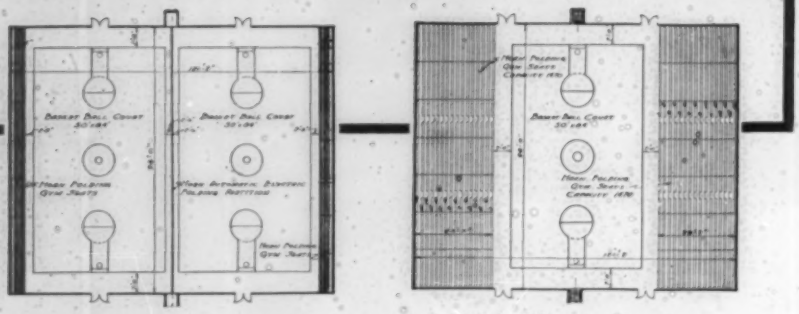
Thomas J. Donoghue, Architectural Designer, 1846 Ash St., Detroit 8, Mich.

P. Arthur D'Orazio, Architect, 712 Union National Bank Bldg., Youngstown 3, Ohio.

S. Myzel, Architectural Draftsman, 1000 W. Wyoming Ave., Philadelphia 40, Pa.

Austin K. Van Dusen, Architect, c/o General Petroleum Corp., 1115 W. 46th St., Seattle, Wash.

UTILIZE YOUR GYM SPACE WITH HORN

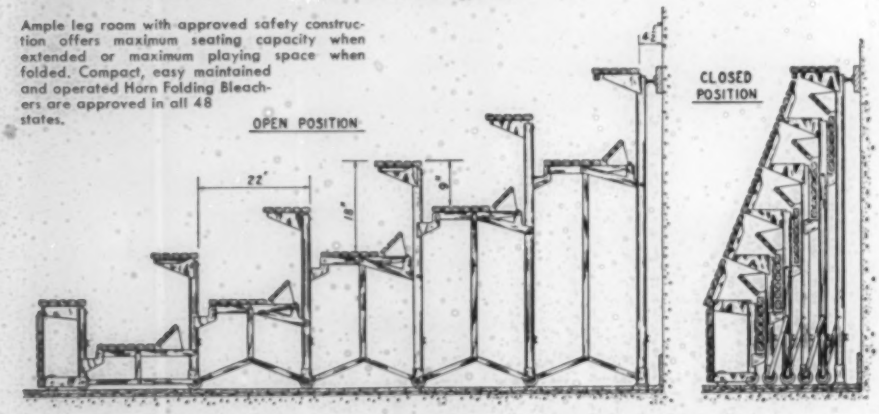


Two regulation basketball courts separated by a Horn Automatic Electric Folding Partition. Horn Folding Bleachers in folded position.

HORN FOLDING BLEACHERS extended increases the seating capacity for the BIG GAME! Horn Folding Bleachers will meet your requirements.

HORN FOLDING BLEACHERS

Ample leg room with approved safety construction offers maximum seating capacity when extended or maximum playing space when folded. Compact, easy maintained and operated Horn Folding Bleachers are approved in all 48 states.



ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT	ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT
3	4' 9"	1' 8¾"	3' 0"	12	21' 3"	4' 3½"	9' 9"
4	6' 7"	2' 0½"	3' 9"	13	23' 1"	4' 6½"	10' 6"
5	8' 5"	2' 3½"	4' 6"	14	24' 11"	4' 9⅝"	11' 3"
6	10' 3"	2' 6⅝"	5' 3"	15	26' 9"	5' 1¼"	12' 0"
7	12' 1"	2' 10¼"	6' 0"	16	28' 7"	5' 4⅝"	12' 9"
8	13' 11"	3' 1⅝"	6' 9"	17	30' 5"	5' 8"	13' 6"
9	15' 9"	3' 5"	7' 6"	18	32' 3"	5' 11⅝"	14' 3"
10	17' 7"	3' 8⅝"	8' 3"	19	34' 1"	6' 2¾"	15' 0"
11	19' 5"	3' 11¾"	9' 0"	20	35' 11"	6' 6⅛"	15' 9"

SINCE Horn 1909

*Dimension includes 4½ in. space between top seat and wall.
**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

HORN BROTHERS COMPANY
DIVISION OF HORN INDUSTRIES FORT DODGE, IOWA, U.S.A.

Note the strong horizontal rib resulting from the corrugated mesh. It provides greater rigidity and reinforces the plaster similar to reinforced concrete.

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Steeltex Lath for Plaster

You eliminate worry when you specify *Pittsburgh Steeltex* because you can be sure that the combination of strong, rigid, deeply embedded steel mesh and tough, absorbent backing will give you the best plaster wall you can possibly build.

You actually cut costs because you don't waste plaster and you reduce eventual maintenance. For detailed reasons for writing *Steeltex* into your specifications, see our catalog in Sweet's or write for catalog D. S. 130, Dept. AR, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

Pittsburgh 30, Pa.

(Continued from page 105)

and the relationship of the buildings to one another. He is aware of the possibilities of variety and of the contrasts between volumes of outdoor spaces as they are defined by building masses. Believing that urban areas are more attractive when limited in size, he has divided the town into compact units, separated by areas of landscape, parkways and playing fields. The site is rich in tradition — there are a number of old churches, chapels, houses and cottages — and the master plan seeks to preserve landscape features and all existing buildings of worth, integrating them with the new. In extent, Harlow New Town will eventually be about 3¼ miles from north to south, 4½ from east to west across its widest parts; it covers 6320 acres.

Industrial areas provided in the master plan cover 535 acres, of which one part, in the northeast corner, is for immediate development; the other, in the northwest, is to be developed later. An industrialist moving to the New Town can either lease land and build his own factory, or rent a standard factory — or factory sections — to be built by the Development Corporation in units of 2000 sq ft. The eastern industrial area has, with railway and canal, the facilities essential for large industries, whereas the western industrial area will be allocated for smaller factories because of its existing landscape and its proximity to the future town center.

Residential areas consist of thirteen individual units, separated by open spaces which are left free for schools, recreation grounds or farm land in accordance with their natural topography and landscape. The units are grouped around four major centers. In one of these, large-scale town activities will be focused; this will be the Town Center, with the principal shopping and business area, administrative, cultural and entertainment buildings, hotels, wholesale and warehouse buildings. Each of the other three major centers will be composed chiefly of buildings necessary to make the neighborhoods clustered around them self-contained. These four major groups will house each about a quarter of the total population of the town (anticipated to be 60,000, although in the opinion of the General Manager, Mr. Adams, this figure might be increased to 80,000 without causing additional expense except for housing).

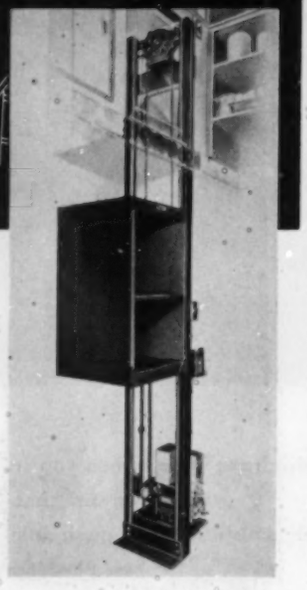
Progress Plan

The Corporation intends to develop unit by unit from east to west, and estimates that it will take five years to reach the Town Center, fifteen to twenty to build the whole town. Division into four interdependent centers facilitates this progress plan. Construction of houses and apartments was started last spring in the unit called Mark Hall North, which lies closest to the existing village of Old Harlow and the eastern industrial zone. This unit is subdivided into three sections, each designed by a different architect: one by Frederick Gibberd, the author of the master plan; one by Maxwell Fry, Drew and Partner; one by a Design Unit of the Development Corporation.

With the construction of dwellings and their principal services is synchronized the building of schools, which

(Continued on page 188)

SPECIFY THE Sedgwick
ELECTRIC UNDER-COUNTER ROTO-WAITER!
for { SAFE / DEPENDABLE / ECONOMICAL
UNDER-COUNTER DUMB WAITER SERVICE

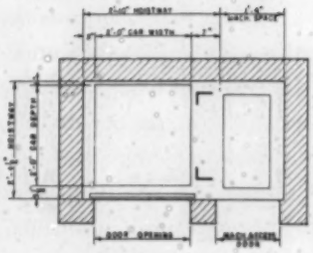


Where space limitations or service needs require an electric dumb waiter installed under a counter . . . in a back bar . . . or in a cabinet — in drug stores, groceries, markets, restaurants, cafeterias, soda fountains — the Sedgwick Under-Counter Roto-Waiter provides the ideal solution. The unique roto-drive principle eliminates the possibility of overtravel and allows every inch of available height to be used safely. The outfit is self-contained, requiring fastening — but no support at the upper floor level. Its compact machine, occupying but a minimum of space in the basement, is placed *at the side* of the equipment, where it is easily accessable for inspection and lubrication — and where it will not be subject to the service disorders so often caused by accumulated dirt, spillage or drainage.

COMPLETE SEDGWICK LINE MEETS EVERY REQUIREMENT

In addition to the Sedgwick Under-Counter, and regular two-stop Roto-Waiters, Sedgwick also builds Multi-Stop Electric Traction Dumb Waiters for three or more landings — with a wide selection of specially engineered control equipment and signal systems to suit individual needs. Other Sedgwick Dumb Waiters — including both electrically and manually operated types — are likewise available in a wide range of sizes and capacities. Steel towers and enclosures can be supplied where desirable. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Write for Illustrated Booklet AR-2



Car Travels to One Inch Beneath Underside of Counter . . . Safely!
Plan, shown above, shows standard Under-Counter Roto-Waiter with car 24" x 24", 150 lbs. capacity. Also built specially in greater capacities with cars up to 36" x 36". The height of the car is, of course, dependent on the clear height available under the counter.

Sedgwick MACHINE WORKS
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ELEVATORS · DUMB WAITERS · RESIDENCE ELEVATORS · STAIR-TRAVELORS
ROTO-WAITERS · SIDEWALK ELEVATORS · FREIGHT ELEVATORS · DUMB WAITER DOORS
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Headmaster Praises Multi-Clean Method for Gym Floors

Hard, Gleaming Surface
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Minimum Maintenance

The Multi-Clean Method, applied to this floor, gives it a long-lasting gloss . . . keeps it in tournament shape. Multi-Clean Gym Finish excels or meets all specifications established by the Maple Flooring Manufacturers' Association.

● A report from the Headmaster of a leading Midwestern prep school stated that the Multi-Clean Method applied to their gym floor resulted in greater gloss and durability, better safety and sharply reduced labor and maintenance costs.

Applied to gym floors, the Multi-Clean Method resists rubber burns, makes a tough, gleaming surface. Since it provides fast, slip-free footing, it helps prevent accidents. Maintenance costs are negligible, because only periodic sweeping or vacuuming is needed between annual applications of Multi-Clean Gym Finish. A light buffing removes heavy rubber marks.

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A finger-tip reference for maintaining every type of floor

Multi-Clean Maintenance Manuals for every type of floor are available upon request. These manuals furnish you detailed instructions for the proper care of wood, concrete, rubber tile, terrazzo, asphalt tile and linoleum floors . . . information for maintaining floors in specific buildings or industries. They show you how to keep floors safer, looking better, wearing longer. Send for the complete series today.

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St. Paul 1,
Minnesota

BRITAIN BUILDS HER NEW TOWNS

(*Continued from page 186*)

rests with the Education Authority; of health centers, which are the responsibility of Harlow Development Corporation; and a hospital, which falls under the authority of the Ministry of Health. Private architects will be commissioned by the respective authorities to design these buildings. The progress plan further includes provision of social and recreational facilities, the step-by-step building of the neighborhood center with its shopping and service facilities. To provide for entertainment in the early stage of development, part of a standard factory unit, planned in the close-by industrial area, will temporarily be fitted and rented as a cinema.

Meanwhile detailed planning of the second unit, Mark Hall South, has been started. It comprises four distinct developments assigned to different architects: one to a second Design Unit of the Development Corporation; the others to the following private firms: Cadbury Brown, Richard Sheppard, F. R. S. Yorke.

Distribution of Planning Work

Distribution of work among various offices offers younger architects chances to establish reputations. Private architects are given commissions either on merits of past work or on approval of applications to the Corporation. The Corporation holds full responsibility for choice of architects; the Minister is not consulted on this question.

To the offices of the Corporation in Harlow, and to the surveyors, architects, and engineers, is added another professional figure peculiar to building practices in England: the quantity surveyor, who has independent status as a controller and advisor on all facets of building expenditure. In England, hardly any architect would be prepared to proceed beyond preliminaries without the services of a quantity surveyor. These are remunerated on a percentage fee basis, and include preparation of bills of quantities on which bids and final building contracts are based — a procedure which leaves no possibility for difference of opinion or interpretation. To this post the Harlow Development Corporation appointed Oswald E. Parratt, who has a staff of eighty. The execution of all work — buildings, services and roads — is entrusted to contracting firms after competitive bidding.

Acquisition of Land

Closely synchronized with development progress is acquisition of land. Just over 1350 acres of the Mark Hall area have already been purchased. As a general rule, the farmer is given sufficient time to rotate his crops and get full value out of his land before it is taken over.

Harlow New Town is here used as example because it is the one farthest along in actual construction. Visitors to next year's British exhibition, *The Festival of Britain*, will be invited to inspect Harlow New Town as a show window of the Ministry of Town & Country Planning's achievements. From the top floor of the ten-story apartment block in Mark Hall North, scheduled for completion early next spring, visitors will have a view of the entire Harlow area.

OTHER NEW TOWNS

Other New Towns in the London region follow a more or less similar pat-

(*Continued on page 190*)

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COMPLETELY PACKAGED
AIR CONDITIONER

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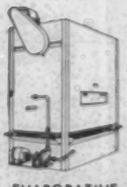
UNIT COOLERS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AIR CONDITIONERS

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If you want the best—if you want the most economical and reliable air-conditioning unit on the market . . . CHOOSE GOVERNAIR and SAVE!

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS

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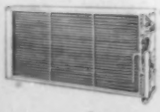

BLAST COILS FOR HEATING & COOLING

New KAYLO® FIREDOOR

Provides the Beauty of Natural Wood

—Plus Rated Fire Protection

Underwriters' Laboratories, Inc.
INSPECTED
FIRE DOOR FOR OPENING IN VERTICAL SHAFT
No. S [redacted]

For both public and residential buildings, the new Kaylo Firedoor offers these important advantages:

FIRE PROTECTION—Built around an incombustible Kaylo core, using fire retardent treated wood edge bands, the Kaylo Firedoor carries an Underwriters' fire rating for Class B and C openings.

HANDSOME APPEARANCE—The wood veneer-faced Kaylo Firedoor equals the richness of the most striking conventional wood doors.

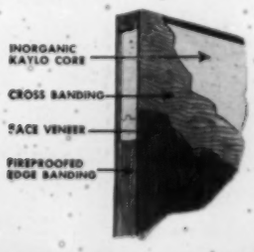
GREAT DIMENSIONAL STABILITY—A Kaylo Firedoor does not warp, swell or shrink—even when subjected to heat or cold, dampness or dryness.

HIGH INSULATING VALUE—Installed in an exterior opening with weather stripping, a Kaylo Firedoor insulates more effectively than a conventional door, *plus* a storm door.

LIGHT WEIGHT PLUS STRENGTH—A standard 3'4" x 7' Kaylo Firedoor weighs only 90 lbs., but can support an 8000-lb. distributed load with only ½-inch deflection while loaded. After unloading, there is no permanent deflection.

Get all the facts now about the new Kaylo Firedoor.

CROSS SECTION OF A KAYLO FIREDOOR



Waterproof glue is used to bond veneer cross banding to the Kaylo core and face veneer to cross banding. Edge bandings are strips of solid hardwood, which have been treated with Protexol Class A fireproofing agent.

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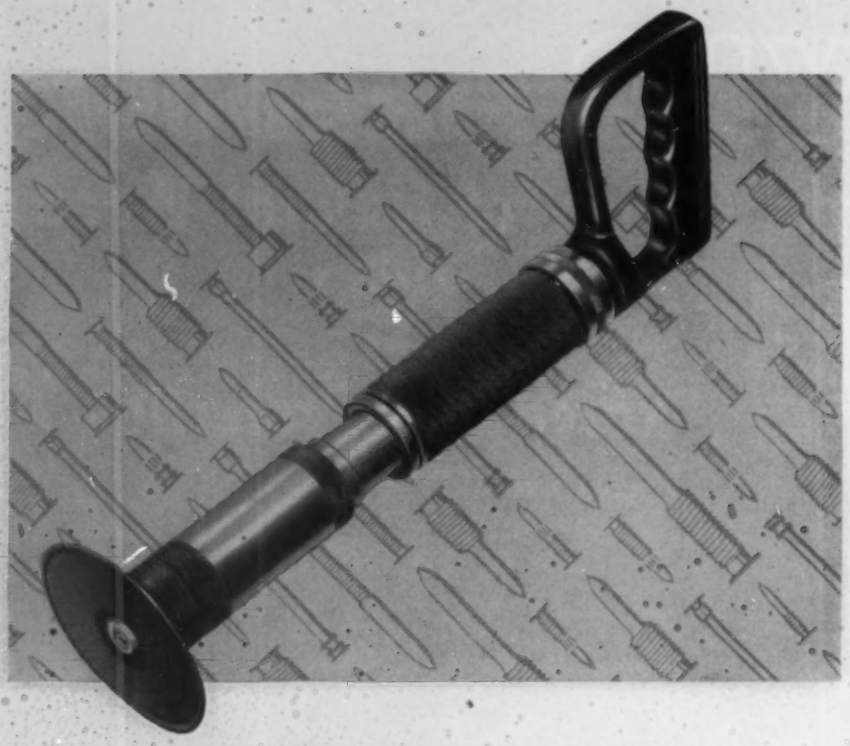

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Ramset Fastening System
Pioneer in powder-actuated fastening

BRITAIN BUILDS

(*Continued from page 188*

tern. In some, for instance Welwyn Garden City and Hatfield New Towns, are incorporated large existing developments. Not interfering with Ebenezer Howard's original garden city concept, the two planners, Louis de Soissons and Lionel Brett, add to this twin city new elements of urban quality.

From Crawley New Town, on the London-Brighton electric railway, the center of London is easily reached, a fact which has led to a different progress schedule. In contrast to Harlow, the Crawley Development Corporation gives first priority to industrial buildings, expecting that workers transferring to the New Town could, for a time, remain in London homes and travel to their new place of work, moving to Crawley as new houses become available there.

Plans of New Towns outside the London region strongly reflect their respective situations and, basically, are modeled on their industrial structures: Aycliffe in the north of England, for residences next to an existing large war plant now turned over to peacetime purposes; Peterlee, to provide living accommodations for miners at present existing in poor villages of rundown houses; Cwmbran, where a number of factories have been built under the Government's policy to revive South Wales; Corby in Northamptonshire, where expansion of iron and steel works will more than double the size of the existing town. Not all the New Towns are new. Some are unforeseen or accelerated expansions of existing communities.

WOULD THE IDEA WORK IN THE UNITED STATES?

Once we agree upon the desirability of organized decentralization, and upon the New Towns idea as a satisfactory method, the principles underlying the idea can be applied to metropolitan areas everywhere. In England, the New Towns idea has developed logically, in sequence, with legislative acts — essentially non-party, or more properly, *all*-party measures — gradually planting the roots for its development.

The scale of the idea suggests governmental participation and support at the start. As soon as the revenue-producing phase is reached, there is no reason why private enterprise should not enter and either purchase or build on its own account. In London the most important

(*Continued on page 192*)

A MORE LUXURIOUS WAY OF MOVING MORE PEOPLE

at a surprisingly low price*

The new Otis *free-flow* Escalator extends the spaciousness of free-flow sales aisles to vertical transportation. Shoppers ride side-by-side as casually as they walk along a sales aisle. Without waiting, crowding, effort. It's a more luxurious way of attracting more street-level shoppers to upper floors and basements—*at a surprisingly low price.**

IN DEPARTMENT STORES. The new Otis *free-flow* Escalator is really an inclined sales aisle. Shoppers look around comfortably as they ride . . . locate sales items faster . . . see bargains they might otherwise have missed . . . make more impulse purchases—*because merchandise that can be seen can be sold!*

IN TRANSPORTATION TERMINALS. The new Otis *free-flow* Escalator is a good-will builder. It moves masses of people quickly from one level to another without crowding. Travelers are grateful. It eliminates delays and the physical effort of walking and carrying baggage upstairs.

IN COMMERCIAL BUILDINGS. The new Otis *free-flow* Escalator is an income builder. It gives 2nd floor locations street-level accessibility. Either from the lobby or direct from the sidewalk. It opens up large-area 2nd floor rentals to banks and heavy-traffic retail stores.

Details? The new Otis *free-flow* Escalator has a 48" riding width and a traffic capacity of 8,000 riders an hour. In addition, it has all the proven design features of Otis' amazingly successful 32" wide escalator which it complements—*as any of our 263 offices will gladly explain!* Otis will also be glad to make traffic studies and assist in developing complete vertical transportation systems—without obligation. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

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A Better Receptor for Stall Showers with Walls of Tile, Marble, Glass, etc.

For beauty... for safety... for absolutely leakproof service at the most vital points in shower construction... specify the Weisway Vitreceptor. The textured sea shell pattern in a neutral tone on lustrous white harmonizes with any color scheme. Foot-Grip, No-Slip floor is safe, wet or dry, non-absorbent, easy to keep clean and sanitary.

Formed in one piece, of 14-gauge enameling iron, with vitreous porcelain finish inside and out, Vitreceptor has no dirt-gathering joints, nothing to crumble away. No metal underpans or wall flashing are required, no messy mastic or other "waterproofing." Vitreceptor *stays leakproof*—assures client satisfaction through the years, protects your reputation. For better stall showers with any practical wall material specify Vitreceptor. Write for new catalog folder with dimensional and installation details.

Protection at Vital Points

Adjoining finish wall materials are enclosed within a continuous rim which is an integral part of the Vitreceptor body. This feature provides a positive wall flashing and assures a leakproof meeting joint, whether the wall material is tile, as in the illustration at the left, glass, marble, etc.

HENRY WEIS MFG. CO., INC., 1203 WEISWAY BLDG., ELKHART, IND.

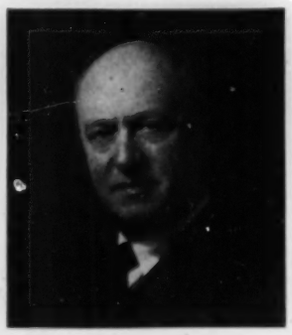
BRITAIN BUILDS

(*Continued from page 190*)

building investments are on ground leased for ninety-nine years or longer; the lease proposition of the New Towns Act is familiar to the British investor. To inject freehold propositions into the New Towns idea might alter its local interpretation but would probably not lessen its effectiveness. To protect against uncoordinated design, a carefully considered definition of permissible building volume and height would be required. The impressive architectural aspects of Paris, for instance, could not have been achieved and protected without such restrictions.

When we look at our metropolitan centers we may or may not like changes inside them; our tastes differ; but we almost unanimously agree that a drive through the outskirts, comparing the picture we see today with that of only ten years back, is painful. If once there was beauty there, nothing is left of it. Subdivisions, with monotonous apartment buildings or detached houses spilt like peas over the site, replace former farm land and landscape features in locations which should have been protected if for no other reason than to secure for the encircled city breathing space and recreational possibilities. Would it not have been wiser to prevent the tentacles of ribbon development along main roads, to have preserved a surrounding strip of green, to have organized decentralization into new, balanced communities?

For the United States, or any other country struggling against uncontrolled urban growth, the British New Towns open a new vista. It can be modified to meet almost any circumstances or customs without losing vitality. What possibilities are latent in the idea!



The author, Michael Rosenauer, F.R.I.B.A., A.I.A., known internationally as an architect, planner and housing expert, was born in Austria and has practiced in Vienna, Paris, London, and the United States. He is Visiting Professor at the School of Fine Arts, University of Pennsylvania.

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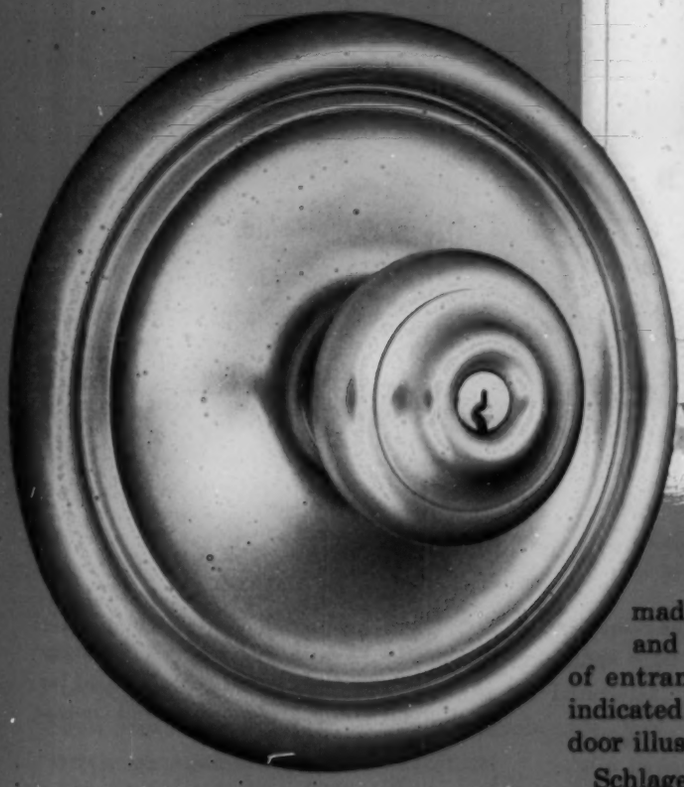

"Pantheon" Design, *with 8" escutcheon—* may be placed 5" to 24" from the door edge with the Schlage "long backset."

Use of impressive, large escutcheons is made possible by the Schlage "long backset"—a new and notable design factor for dramatic treatment of entrance doors. Extreme flexibility of placement is indicated by centering of the Schlage lock on the panel door illustrated.

Schlage "long backset" locks are easy to install—have the dependable Schlage mechanism—proved by more than a quarter century in use.

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THE RECORD REPORTS

(*Continued from page 24*)

ON THE CALENDAR

Through Dec. 2: 19th National Exposition of Power and Mechanical Engineering — Grand Central Palace, New York City.

Through Jan. 28: "Good Design," an exhibition of the best designs in home furnishings for the year 1950 as chosen by the Museum of Modern Art Selection Committee — The Museum of Modern Art, 11 W. 53rd St., New York City, and The Merchandise Mart, Chicago.

Dec. 1–2: Great Lakes Regional Seminar, the American Institute of Architects — Oliver Hotel, South Bend, Ind.

Dec. 6 and 13: Last two of ten conferences, *Forum for Modern Living*, sponsored by the Architectural League of New York. *Dec. 6* — Lighting and Color in the Home; *Dec. 13* — Widening Horizons. Conferences are scheduled from 8:30 to 10:00 p.m. — The Architectural League, 115 E. 40th St., New York City.

Jan. 15–18: Plant Maintenance Show and Conference on Plant Maintenance Techniques — Auditorium, Cleveland.

Jan. 17–Mar. 18: Exhibition of prize-winning designs from Lamp Competition — Museum of Modern Art, 11 W. 53rd St., New York City.

Jan. 18–20: Seventh Annual National Technical Conference, Society of Plastics Engineers, Inc. — Hotel Statler, New York City.

Jan. 21–25: Seventh Annual Convention, National Association of Home Builders — Stevens and Congress Hotels, Chicago.

Jan. 22–25: 57th Annual Meeting, American Society of Heating and Ventilating Engineers — Bellevue-Stratford Hotel, Philadelphia.

Jan. 22–26: 10th International Heating and Ventilating Exposition — Commercial Museum, Philadelphia.

BETTER Colors WITH Premium Quality

BETTER Wear

BETTER Floors

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There are four good reasons why Azphlex grease-resistant asphalt tile offers such remarkable qualities:

1. ***Tremolite Talc,*** its mineral filler, is highly stable, and totally resistant to alkalis, acids and other chemicals. It is fine-grained and microscopically fibrous.
2. ***Asbestos Fiber*** used in Azphlex is of the Chrysotile variety, noted for its fine texture, flexibility, strength and resistance to fire.
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4. ***Color Pigments*** used in Azphlex are permanent and alkali resistant.

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When you specify grease-resistant, premium-quality Azphlex Asphalt Tile — you can *know* that you're giving your clients better, longer-lasting floors at lower cost. *Get full information and sample tiles from your AZROCK-AZPHLEX Dealer, or write to Dept C.*

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OFFICE NOTES

Offices Opened

• Thomas J. Donoghue has opened an office for the general practice of architectural design at 1846 Ash St., Detroit 8, Mich.

• Myron M. Kehne announces the opening of an office for the practice of architecture at 2639 University Ave., St. Paul, Minn.

• Harry C. Kline, Jr., industrial designer, has opened new shops and offices at 49 Virginia Place, Buffalo, for the making of industrial scale models for architectural, engineering and industrial firms.

• Eleanor Pepper, Architect, announces the opening of her office as consultant on interior design and finishes at 150 E. 35th St., New York City.

New Firms, Firm Changes

• Edward J. Hurley and Raymond P. Hughes announce the partnership of Hurley & Hughes, Architects, with offices at 12 E. 48th St., New York City.

• Announcement has been made of the formation of the partnership of Graham Latta and Carl Denney, Architects, at 940 Alma St., Glendale 2, Calif.

(*Continued on page 196*)

Installation of Bethlehem Longspan Joists in Fernbrook Park Mill (Dallas, Pa.) of Bloomsburg Mills, Inc. *Architect:* Lacy, Atherton and Davis, Wilkes-Barre, Pa. *Contractor:* Sordoni Construction Co., Forty Fort, Pa.

Fewer Interior Columns Needed When You Design with Longspans

YOU'LL find that fewer interior columns are required when you use Bethlehem Longspan Steel Joists to support the roofs of warehouses, factories, garages and similar structures.

Bethlehem Longspan Joists are ideal for use in roof construction of industrial buildings because they eliminate interior columns in floor areas up to 64 ft or more across. In addition to making possible greater clear floor area, they have these other advantages: (1) they reduce the need for pilasters, (2) they save construction time, as pipes, conduits and ducts can be run through the open webs of the joists, (3) they can be used to advantage in floor construction.

Bethlehem Longspan Joists come completely fabricated and clearly marked, ready for use. They are made in two types—underslung construction with top-bearing ends, and bottom-bearing construction with square ends. They have cambers of approximately $\frac{1}{2}$ in. for 30-ft spans, $\frac{3}{4}$ in. for 40-ft spans, 1 in. for 50-ft spans, and $1\frac{1}{2}$ in. for 60-ft spans.

For additional details about Bethlehem Longspan Joists, get in touch with the nearest Bethlehem sales office. Or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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BETHLEHEM STEEL

BETHLEHEM LONGSPAN JOISTS

THE RECORD REPORTS

(*Continued from page 194*)

• George Nemeny and A. W. Geller, Architects, have announced the dissolution of their partnership. They will continue to practice independently — Mr. Nemeny at 100 W. 42nd St., New York City, and Mr. Geller at 130 E. 56th St., New York City.

• Howard W. Tuttle, A.I.A., H. James Holroyd, A.I.A., and Richard N. Matheny, A.I.A., announce the formation of a partnership for the general practice of architecture. The new firm, which will be known as Tuttle, Holroyd and Matheny, will have offices at 3201 W. Broad St., Columbus 4, Ohio.

New Addresses

The following new addresses have been announced:

P. Arthur D'Orazio, Architect, 712 Union National Bank Bldg., Youngstown, Ohio.

John Kewell, Architect, 1344 Wilshire Blvd., Los Angeles 17, Calif.

Newton L. Lockwood, Architect, 112 W. Main St., Plainville, Conn.

Theodore L. Soontrup, A.I.A., 118–14 Queens Blvd., Forest Hills, L. I., N. Y.

Beverly A. Travis & Assocs., Electrical Engineers, and C. W. May, Mechanical Engineer, 407 Medical Arts Bldg., Seattle 1, Wash.

ELECTIONS APPOINTMENTS

• Officers of the Northern California Chapter of the American Institute of Architects for 1950–51 are: Ralph Pollack, president; F. Joseph McCarthy, vice president; William B. McCormick, secretary; George A. Downs, treasurer; Charles F. Masten, director (three-year term), and (continuing as directors) John Lion Reid and William H. Rowe.

• Charles J. Nocar, director of research and development at the E. H. Hauserman Co. of Cleveland, has been elected president of the Acoustical Materials Association for 1950–51.

• Dave Chapman, 41-year-old Chicago industrial designer, has been elected president of the Society of Industrial Designers for the coming year. He succeeds Egmont Arens of New York. Other newly-elected officers of the Society are: Viktor Schreckengost, Cleveland, vice president; Robert Hose, New York, secretary; and A. Baker Barnhart, New York, treasurer.

• Officers and new directors elected by the American Institute of Steel Construction at its annual convention are: president — R. D. Wood, Mississippi Valley Structural Steel Co., Chicago; first vice president — J. E. Jackson, Pittsburgh-Des Moines Steel Co., Pittsburgh; second vice president — J. Philip Murphy, Judson-Pacific-Murphy Corp., Emeryville, Calif.; executive vice president — L. Abbett Post, New York City; treasurer — James M. Straub, Fort Pitt Bridge Works, Pittsburgh; secretary — M. Harvey Smedley, New York City; directors — R. N. Allen, Star Iron & Steel Co., Tacoma, Wash.; L. J. Knapp, Whitehead & Kales Co.,

(*Continued on page 198*)

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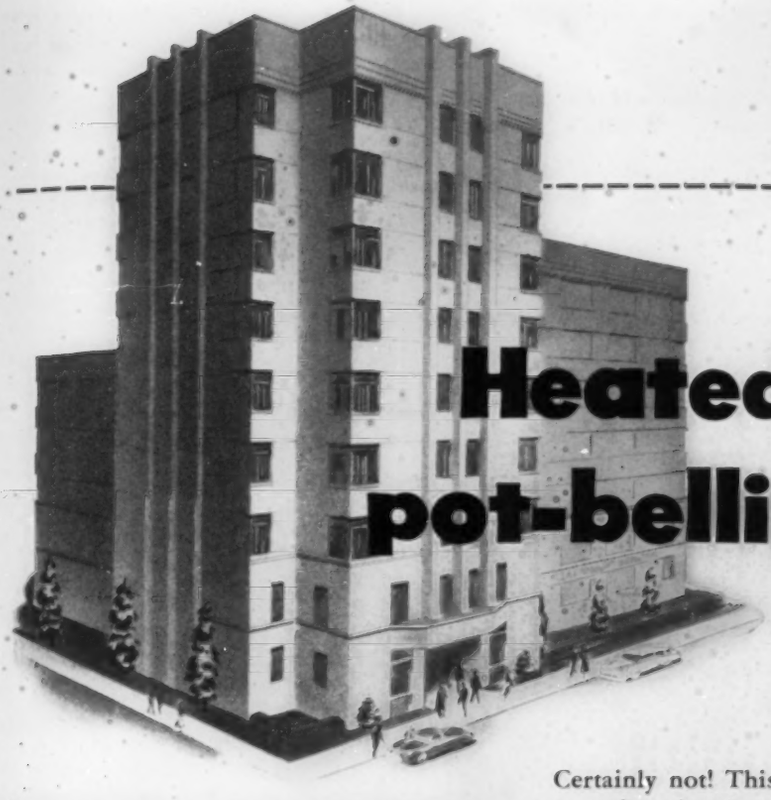
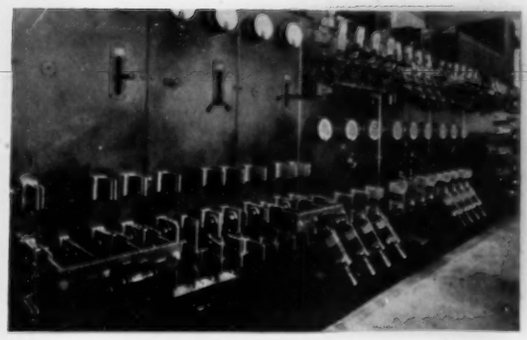
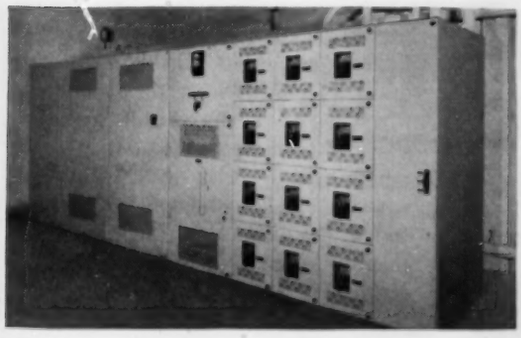


Heated by pot-bellied stoves?

Certainly not! This modern new building will naturally have a modern heating system, too. Yet . . . *electrical equipment—nearly as old-fashioned as the pot-bellied stove—is often specified, purchased, and installed in buildings under construction today.*



THE OLD WAY . . . live front, with fuses, knife switches and air circuit breakers—a disorderly arrangement of equipment that introduces problems of safety, flexibility and service continuity.



THE MODERN WAY . . . Westinghouse "Unitized" Low-Voltage Switchgear. Metal-enclosed air circuit breakers speed servicing . . . are interlocked to assure safety of personnel. All operations accomplished without exposing live parts.

We refer to electrical control equipment . . . the all-important nerve center of any modern building. This is where the power supply is controlled and distributed to the many facilities which depend upon electricity. Here, you must be *sure* . . . for the protection of costly equipment, the safety of personnel, and operation of vital services are at stake.

Westinghouse Low-Voltage, Metal-Enclosed Switchgear offers the kind of dependability you need for this critical application. This is the modern way . . . the way that assures adequate interrupting capacity . . . that eliminates fire hazard. All breakers and associated equipment are completely enclosed in convenient, self-supporting "Unitized" structures to assure safety, flexibility, reliability. Contrast this with the old-fashioned installation shown at left, above—a type which is still being specified—and ask yourself this question:

Which type of installation will best fit the buildings I design?

For complete information on Westinghouse Low-Voltage Switchgear, send for Booklet B-2296-D. Address: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. J-60733

Westinghouse

LOW-VOLTAGE SWITCHGEAR

(Continued from page 196)

Detroit, Mich.; Earl A. Jung, August Feine & Sons Co., Buffalo; F. E. Owen, Paxton & Vierling Iron Works, Omaha.

• Harry W. Pierce has been elected president of the American Welding Society for the coming year. Mr. Pierce is assistant to the president, New York Shipbuilding Corp., Camden, N. J. Other officers elected are: first vice president — Charles H. Jennings, engineering manager, Welding Department, Westinghouse Electric Corp.; second vice president — Fred L. Plummer, director of engineering, Hammond Iron Works, Warren, Pa.

• Lester T. Avery, president of the American Society of Heating and Ventilating Engineers, is chairman of the Advisory Committee of the 10th International Heating and Ventilating Exposition, to be held at the Commercial Museum in Philadelphia January 22–26. Others named to serve on the committee are these Society members: Charles S. Leopold, member of the Council; John W. McElgin, president, Philadelphia Chapter; Edward L. Crosby, president, Baltimore Chapter; H. J. Kirkendall, president, Pittsburgh Chapter; Carl F. Kayan, president, New York Chapter; H. P. Gant and Merrill F. Blankin, past presidents. A. J. Nesbitt, general chairman of the ASHVE annual meeting, also is a member of this group.

• Leigh W. Haefle has been appointed assistant chief engineer of the general engineering department of Air Reduction Co., Inc.

• Lyman H. Allen Jr., formerly assistant chief design engineer in charge of chemical process design with the American Viscose Corp. in Philadelphia, has been named chief engineer of Foster D. Snell, Inc., New York firm of chemical and engineering consultants.

Used with the Rixson Uni-Check, the Multi-Point Door Holder No. 37 offers an unsurpassed installation for doors which require several points of hold-open. Upon quick release by a slight manual opening of the door, it returns to closed position under control of the hydraulic checking device. Almost any number of positive hold-open points desired may be furnished.

Special problems of installation will receive prompt attention from the Rixson engineering and designing departments.

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LOS ANGELES—George E. Tupper, 1010 W. Olympic Blvd., Tel. Prospect 0924.

NEW YORK—Fred G. MacKenzie, 107 Reade St., Tel. Barclay 7-6852.

PHILADELPHIA—G. Norris Williams, 211 Greenwood Ave., Wyncote, Pa., Tel. Ogontz 1929.

SEATTLE—S. G. Kirkland, 845 Bellevue Ave., North, Tel. EAst 8855.

WASHINGTON, D. C.—L. R. Anderson, 4318 Rosedale Ave., Bethesda, Md., Tel. Oliver 4873.

AT THE COLLEGES

Microfilm Project Would Save Architectural Data on Chicago

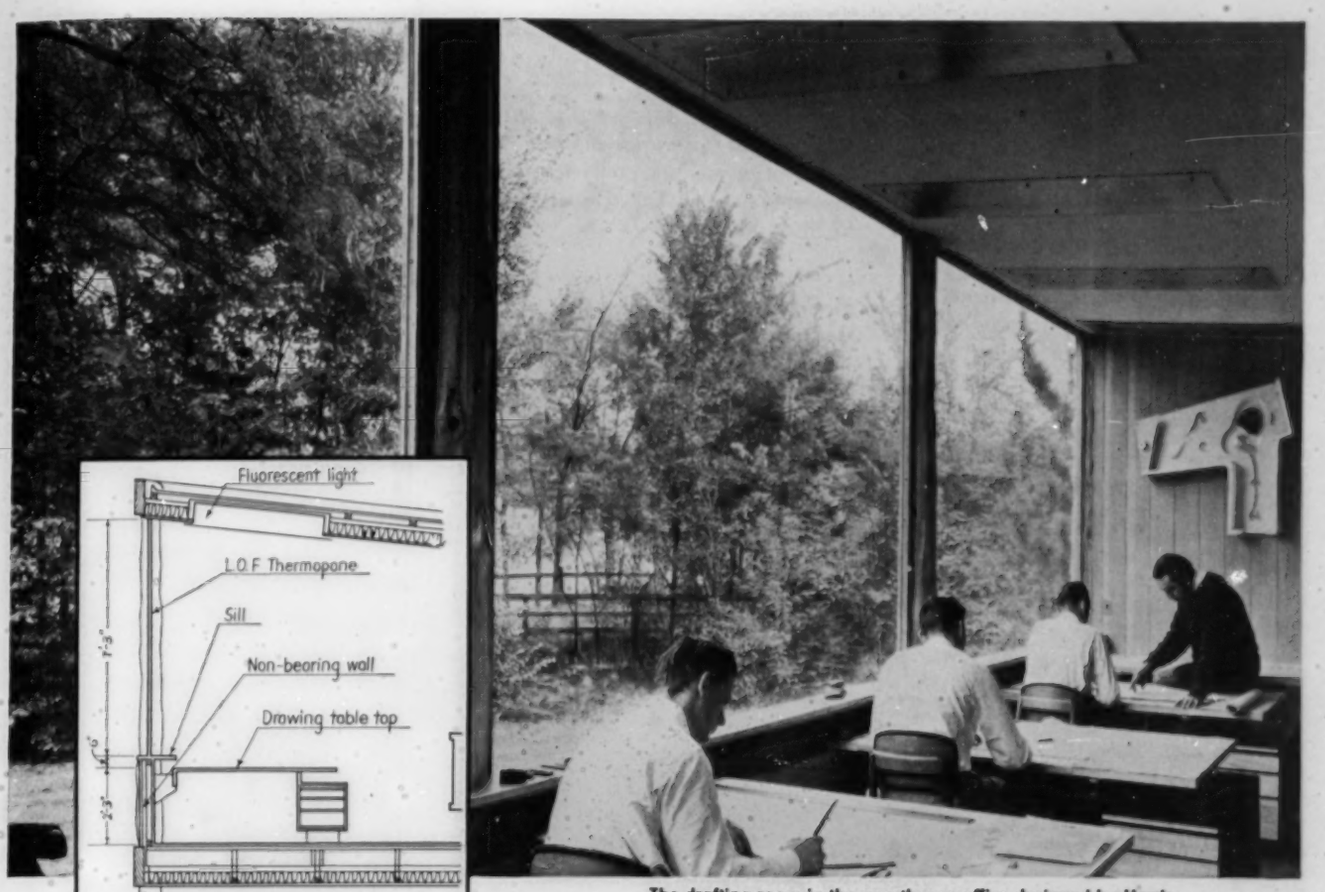
A joint project of the Art Institute of Chicago and the University of Illinois seeks to preserve the architectural heritage of Chicago on microfilm.

John G. Replinger, a 1949 graduate of the School of Architecture of the University of Illinois, has been appointed through the university as executive associate in charge of the microfilming project.

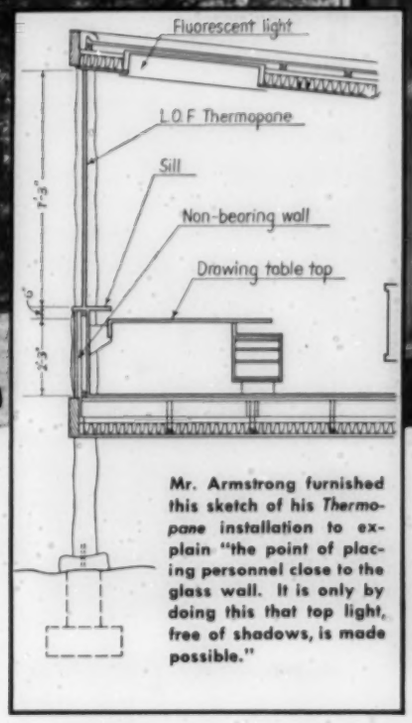
The plan is to microfilm working drawings and other pertinent material which can reveal the essential details of Chicago architecture. These bulky and rapidly disappearing documents can easily be preserved in microfilm form and made available to scholars at the Burnham Library of Architecture at the Art Institute and the Ricker Library of Architecture at the University at Urbana.

Architects, estates, contractors, corporations, realtors or others who may possess plans and other records of significance have been asked to contact Mr. Replinger at the Burnham Library, Art Institute of Chicago.

(Continued on page 200)



The drafting room in the guesthouse-office designed by Harris Armstrong, AIA, of Kirkwood, Missouri, for his own firm.



Mr. Armstrong furnished this sketch of his *Thermopane* installation to explain "the point of placing personnel close to the glass wall. It is only by doing this that top light, free of shadows, is made possible."

How This Architect Designed ...for His Own Business

Here an architect has designed a perfect use of *Thermopane** insulating glass. The north side of his drafting room is a seven-foot window wall. By seating his staff close to the windows, he provides them the benefit of top light. Yet the men remain comfortable and free from winter chilliness. *Thermopane* with ½" hermetic air space, provides approximately twice the thermal insulation of single glass.

Harris Armstrong writes, "*Thermopane* in the other areas is not so important (for personnel comfort) but was used for economic reasons. Since I use electric heat and cooling, the additional cost will probably pay for itself in a very few years in reduced power bills.

"Since the *Thermopane* installations I have made between 1940 and the time I built my office have been all that is claimed for the material, I used it on my own personal work with confidence that it would do a good job, and it has."

Need any information on *Thermopane*? Or on kinds of sash in which it can be used? Our nearest branch office will gladly supply it, or write us direct if you prefer. *®

FOR BETTER VISION SPECIFY THERMOPANE
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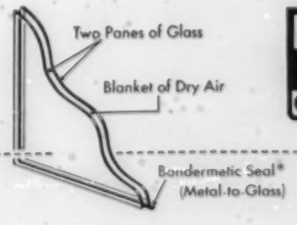

L O F GLASS

Thermopane

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THE RECORD REPORTS

(Continued from page 198)

Warren A. Peterson Wins $150 Sargent-Yale Prize

Warren A. Peterson of Jamestown, N. Y., a student in the Yale Department of Architecture, has been named first prize winner of the Sargent-Yale prize for his design of an exposition booth.

Mr. Peterson received a prize of $150 for his work. Other prize winners were: Francis Kwai Hong Mah, of Honolulu, Hawaii, who received second prize of $100; and Arnold Mogensen of Denver who received third prize of $50.

The prize was open only to students registered in the Yale Department of Architecture.

Fabric Exhibit Is Held At Dartmouth College

An exhibit of decorative textiles, organized by Mrs. John W. Le Sourd, associate of Dorothy Jackson — Interiors, of Boston, was held in the Carpenter Gallery, Dartmouth College, during November.

The exhibition coincided with Modern House Day, a showing of seven modern houses by Architects E. H. and M. K. Hunter. Leading designers, artists, architects and industrial designers were represented.

Included were fabrics from Hambro House of Design, Dan Cooper, Ben Rose, Knoll Associates, Arundel Clarke, Bonnier's, Schiffer Prints, Brunswig et Fils, F. Schumacher, J. Morley Fletcher and Laverne Originals.

Award Set Up at Cornell by Skidmore, Owings & Merrill

Skidmore, Owings & Merrill, architects and engineers of Chicago and New York, have established a $1000 scholarship for fifth-year students in the College of Architecture at Cornell University.

Robert F. Gatje of Brooklyn is the first recipient of the award, which will be made annually.

The new scholarship is awarded primarily on the basis of academic performance and professional promise.

Nathaniel A. Owings of the firm is a graduate of Cornell's College of Architecture, class of 1927.

Scholarships, Fellowships

The Department of Landscape Architecture of Harvard University's Graduate School of Design has announced a scholarship equal to the full tuition fee of $600 for the academic year 1951–52. Inquiries must be received before Jan. 1, 1951.

The scholarship, open to those eligible for admission as regular students in September 1951, will be awarded on the basis of scholastic standing and evidence of interest in the field of landscape architecture.

Detailed information is available from: The Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Mass.

Faculty Appointments

• The College of Architecture and Design at the University of Michigan announces the following appointments to its staff: William Muschenheim, A.I.A., formerly of New York City, M. Arch.,

(Continued on page 204)

HERE'S AID TO ARCHITECTS and ENGINEERS in planning SOUND SYSTEMS!

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Glass: 18,000 sq. ft. of Corning Twin-lite Lens Panels

Added Beauty
Improved Brightness Control

As one of the best examples of modern office building design, it is only fitting that the Bank of Nova Scotia Building in Toronto should be equipped with the latest thing in lightingware—new Corning Twin-lite Lens Panels. A product of Corning research, this important new medium for fluorescent lighting adds beauty and improved brightness control to any installation. The lenses in these water-white crystal lenses are scientifically designed to give a substantial reduction in side and luminaire brightness.

Corning Light-Weight Lens Panels are lower in cost than previous products of this type. For example, two 24" frame mounted Uni-lite or Twin-lite panels will mean a saving in glass cost of nearly 12% over four of the old shorter length panels. Reduction in weight means easier mounting and installation, while the added feature of variable lengths widens the field of application.

Corning Light-Weight Lens Panels are available 11" wide and up to 48" in length in both Twin-lite and Uni-lite patterns. Longer lengths and special widths can be supplied on order. Take advantage of the possibilities offered by this truly new lighting-ware. Write for information today.

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Name_____ Title_____

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Address_____

City_____ Zone____ State_____

(*Continued from page 200*)

Peter Behrens School, Vienna — professor of architecture; A. Benjamin Handler, B.A. Queens University, Canada, M. Sc. London School of Economics — associate professor of planning.

• Mr. and Mrs. Paul Wieghardt have been appointed instructors in life drawing in Illinois Institute of Technology's Architecture Department.

EXHIBITIONS

Boston Architects Plan to View "Rotch in Retrospect"

"The Rotch in Retrospect," an exhibition featuring selected work of all holders of the Rotch Traveling Fellowship since its institution in 1883, will begin a month's run in Boston on December 12.

The exhibition has been planned in memory of Mrs. Horatio A. Lamb, daughter of Mr. and Mrs. Benjamin S. Rotch, in whose memory the scholarship was established. Mrs. Lamb died earlier this year.

To open the exhibition, the Boston Society of Architects will hold a dinner meeting on December 12. Each former holder of the scholarship (or his successors) is being asked to submit photographs, drawings and/or models of the projects which he (or his successors) considers to be his best work.

The exhibition will be held in the gallery of the John Hancock Building and the dinner, to which all former Rotch scholarship holders will be invited, will be held in the Dorothy Quincy suite of the same building.

The last returning Rotch scholar, Victor Lundy, brought home a group of European and South African water colors, which will be included in the memorial exhibition.

Gold Medal Exhibit Opens at Architectural League Jan. 15

Architectural works will have their exhibit in the Architectural League's monthly series beginning January 15 at the League, 115 E. 40th St., New York City. The exhibit will close February 9.

The monthly exhibits, limited to work executed since 1941, provide a source for selection of the exhibits for the League's National Gold Medal Exhibition of all the arts.

Exhibitors on whom awards are conferred for the monthly exhibit will be invited to prepare a comprehensive exhibit of their work for the Gold Medal Exhibit next June. Exhibitors must be citizens of the United States, but membership in the Architectural League of New York is not necessary. Preliminary submissions in the architectural exhibit were due November 10.

Finn Juhl Chosen as Designer For '51 Good Design Display

Finn Juhl, Danish designer, has been selected to design the installation for the 1951 version of the "Good Design" exhibition of home furnishings sponsored by the Museum of Modern Art in New York and The Merchandise Mart in Chicago. The exhibit opens Jan. 15.

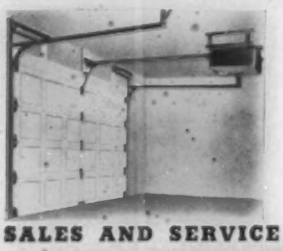
(*Continued on page 206*)

BARCOL

LOOK FOR THIS MARK OF QUALITY

Touch a Button... to Open the Door

The magic of radio brings you this modern convenience! With BARBER-COLMAN RADIO CONTROL, you can open or close your garage doors by simply touching a button in your car. The car can be moving, or standing still, anywhere (and in any position) within approximately 75 feet of the garage. The equipment operates on FCC-assigned frequencies, hence can use maximum power in the transmitter and a minimum of tubes in the receiver. Barber-Colman, a pioneer in the radio control field, is a reliable source of practical equipment, with over 20 years experience in this specialized field. *Ask your Barcol representative for a working demonstration of the amazing Radio Control.*



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Because this can be 12 different doors

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One of 135 Fenestra Doors in Mandeville High School, Flint, Mich. Architect: Bennett & Straight of Dearborn. Contractor: Karl B. Foster, Flint.

The secret is a clever hinge arrangement—plus a muntin, a glass panel and a metal panel. This same beautiful Fenestra* Hollow Metal door can be used: Swing-in or swing-out . . . left or right hand—each with panels of metal or glass . . . with or without a muntin.

It costs a lot less because Fenestra craftsmen can give you the variety you need and still concentrate production facilities on a few basic high-quality types. Naturally, when production waste in time and money is eliminated, quality goes up and cost comes down.

This door is tough—it can be kicked and slammed and still look good. After years of use, a coat of paint will make it like new again.

This door is easy to handle—it swings open and shut smoothly, quietly. That operating balance never changes. Each door is packed with sound-smothering insulation.

This door is fire-safe—steel won't burn.

Door Comes Complete with Frame and Hardware. Each Fenestra door is carefully packaged to protect the gleaming finish. You can *count on* quality with Fenestra . . . over half a century a leader in metal fabrication. Take advantage of versatile Fenestra Stock Hollow Metal Doors. You'll appreciate their remarkably low cost. Call your Fenestra representative (listed in the yellow pages of your telephone directory) for further information, or . . .

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THE RECORD REPORTS

(*Continued from page 204*)

COMPETITIONS

Tile Council Sponsoring Two Student Competitions

Two architectural design competitions open to students throughout the United States have been announced by the Tile Council of America, in cooperation with the Beaux Arts Institute of Design. Six awards, totaling $325, are offered.

One competition requires a design for a group of garden apartments, and the other requires a sketch plan for a public swimming pool. In both contests, special attention is to be given to use of real clay tile.

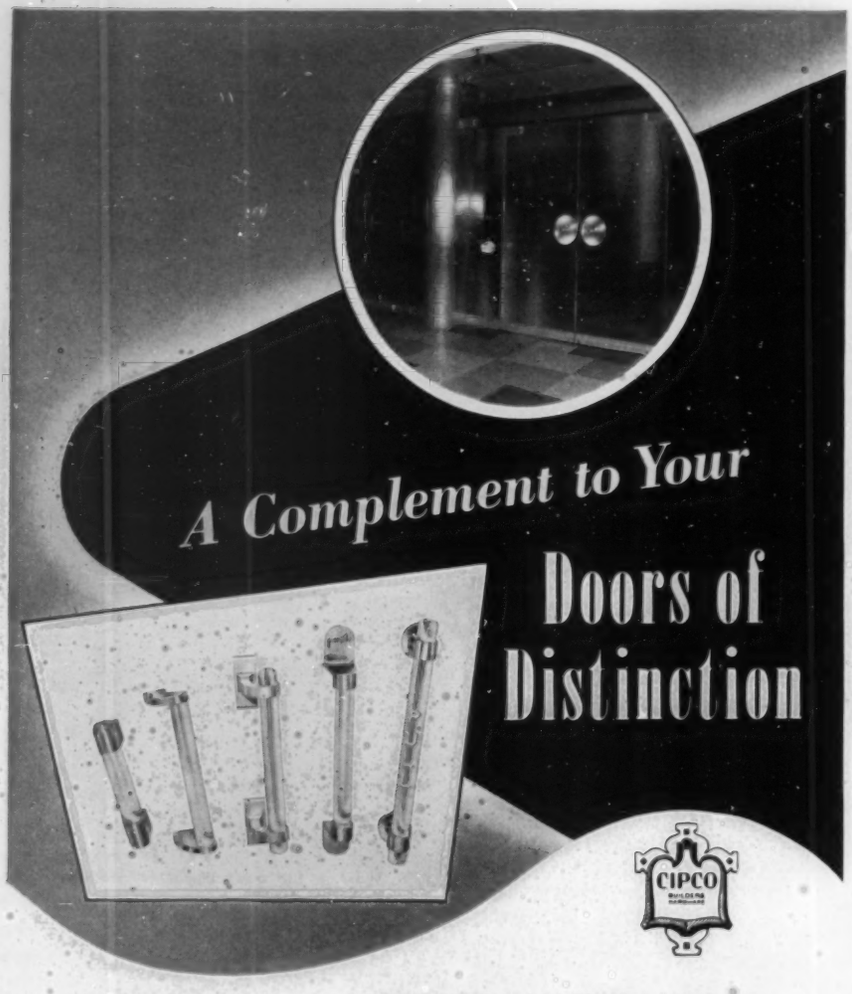
The competitions close December 23. They will be judged the second week in January. Details are obtainable from the Beaux Arts Institute of Design, 115 E. 40th St., New York 16, N. Y.

NESA Holds Contest for Design of Electric Sign

Ten cash prizes totaling $1000 will be awarded to winners of the fifth annual Electric Sign Design Competition, sponsored by the National Electric Sign Association.

Prizes will be given for the best electric sign designed for a specific industrial plant, which was selected to provide equal opportunity for all contestants. A photograph, location map and dimensions of this medium-size, modern factory building are shown in the contest rules, which may be obtained from the NESA, 224 S. Michigan Ave., Chicago 4, Ill.

The contest closes December 31. Awards will be made as follows: first, $500; second, $200; third, $100; fourth, $50; six honorable mentions, $25 each. Winners will be announced at the NESA annual convention in February.



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AWARDS

Lincoln Foundation Makes Awards for Bridge Design

Awards of $10,750 in its 1950 Welded Bridges of the Future Program have been announced by the James F. Lincoln Arc Welding Foundation.

Thirteen engineers and bridge designers participated in the program — design of an all-welded 250-ft highway bridge — and entries were received from 16 different countries.

James H. Jennison, 39, of Pasadena, Calif., head of Development Engineering Division, U. S. Naval Ordnance Test Station, received the first award of $5000. Second award of $2500 went to Ernst Amstutz of Zurich, Switzerland. The Third Award, $1250, was given to Prof. Thomas C. Kavanagh, 38, professor of Civil Engineering, Pennsylvania State College, State College, Pa., who in the 1949 Bridge competition took first award.

Ten honorable mention awards of $200 each went to: M. S. Zakrzewski and J. R. Daymond, Durban, South Africa; Arsham Amirikian, Chevy Chase, Md.; John E. Kayser, Roseland, N. J.; J. W. Briscoe and E. R. Bretscher, Urbana, Ill.; Kazimierz Lecewicz and

(*Continued on page 208*)

SEND TODAY FOR YOUR FREE COPY OF THE RULES OF THE

Chicago Tribune's Fifth Annual

BETTER ROOMS COMPETITION

$25,000.00 IN 145 CASH PRIZES

ranging from $100.00 to $1,000.00 each for the best ideas for furnishing and decorating seven types of rooms

All entries must be received by 5 p.m. of February 19, 1951

In order to bring to readers in 1951 stimulating ideas for furnishing and decorating various types of home interiors, the Chicago Tribune is conducting its Fifth Annual Better Rooms Competition, offering $25,000.00 in 145 cash awards for the best ideas submitted.

Just as the Chicago Tribune's competitions in each of the past four years brought out a wealth of fresh and interesting ideas in this field of high popular interest, so the 1951 competition has been designed to set new standards of excellence in home interior fashions.

Here is your opportunity to plan one or more typical rooms just the way you would like them to be —and to win cash and nation-wide recognition for your efforts.

After the prize winners have been chosen, the Tribune, just as it has in previous years, intends to reproduce the winning ideas, or adaptations of them, in full color in the Chicago Sunday Tribune.

Everyone is eligible to compete, except employes of the Chicago Tribune and subsidiaries, members of their families, and of the Jury of Awards, which, as in the past, will be composed of authorities of recognized high standing in the field of home furnishing and interior decoration.

For complete information to help you prepare your entry, send today for your free copy of the rules which will be sent to you postpaid. The closing time is February 19, 1951. So don't delay.

FILL IN THE COUPON—CLIP AND MAIL TODAY!

Better Rooms Competition
Chicago Tribune, 435 N. Michigan Ave.
Chicago 11, Illinois AR

Without cost or obligation to me, please send to me by postpaid mail at the address below a free copy of the rules of the $25,000.00 Chicago Tribune Fifth Annual Better Rooms Competition.

My Name.....

Street and No.....

City (and Zone No., if you know it).....State.....

(Please PRINT in pencil—ink may blot)

(*Continued from page 206*)

Wlodzimierz of London and Wembley, England; John A. DeLong and A. A. Brielmaier, St. Louis; John Turner Percy, Troy, N. Y.; Sidney Bocalin, Los Angeles, Calif.; I. L. Hamilton, Lanarkshire, Scotland; Kenneth Warren Dobert, Troy, N. Y.

Designs for the program were judged by a jury of leading bridge designers, fabricators, public officials and professors of structural engineering.

Ward Harrison Honored By London I.E.S. Award

Dr. Ward Harrison, a past president of the Illuminating Engineering Society, has become the first American ever honored by honorary membership in the I.E.S. London, British counterpart of the Society in this country and Canada.

Only six honorary members are permitted under the bylaws of the British society, which cited Dr. Harrison's "numerous and valuable contributions to the advancement of the art and science of lighting" in presenting his certificate of membership.

For nearly two decades as director of engineering of the Lamp Department of the General Electric Company, Dr. Harrison was in charge of the largest illuminating engineering organization in the world.

Howard S. Avery Awarded 1950 Lincoln Gold Medal

The American Welding Society has selected Howard S. Avery, research metallurgist, American Brake Shoe Co., as winner of the 1950 Lincoln Gold Medal.

This honor is awarded annually by the Society to the author of the paper judged the greatest original contribution to the advancement and use of welding.

DR. ROBERT E. DOHERTY; CARNEGIE EX-PRESIDENT

Dr. Robert E. Doherty, president-emeritus of Carnegie Institute of Technology at Pittsburgh, died October 19 at Scotia, N. Y. He was 65 years old.

Dr. Doherty, who retired July 1 as head of Carnegie Tech, was a graduate of the University of Illinois and Union College, Schenectady. He was with the General Electric Company from 1909, when he graduated from Illinois, until 1931, first as test and designing engineer and later as principal assistant to the late Charles P. Steinmetz.

At Yale University from 1931 to 1936, Dr. Doherty was first professor of Electrical Engineering and then dean of the School of Engineering, leaving that post to become president of Carnegie.

Dr. Doherty had received many honors for his work in engineering and was the author of several books. He held honorary LL.D. degrees from Tufts College and the University of Pittsburgh, and an honorary M.A. from Yale.

Another award he received was the Lamme Medal of the American Institute of Electrical Engineers, bestowed for his extension of the theory of alternating current machinery and his skill in introducing the theory into practice.

He was credited with having played a leading part in developing the high tension electrical system.

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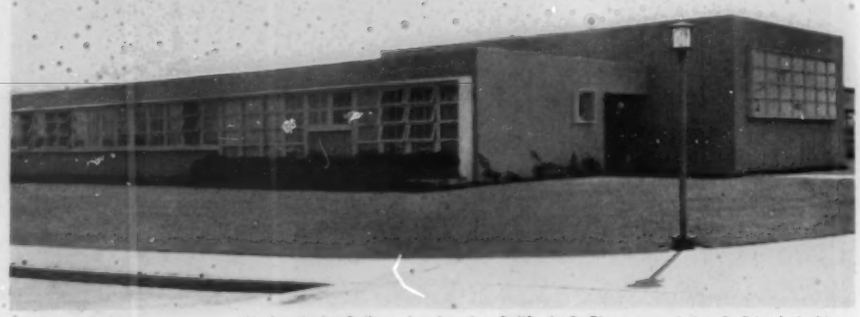

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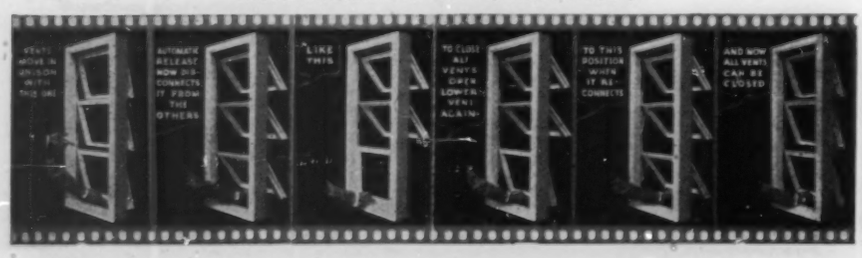
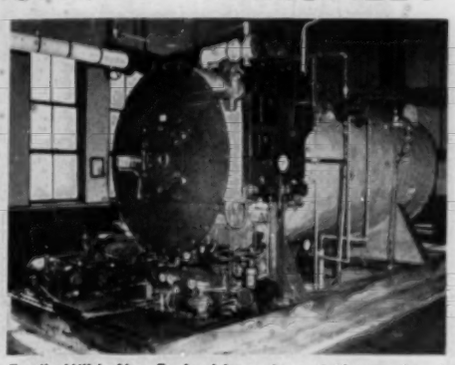
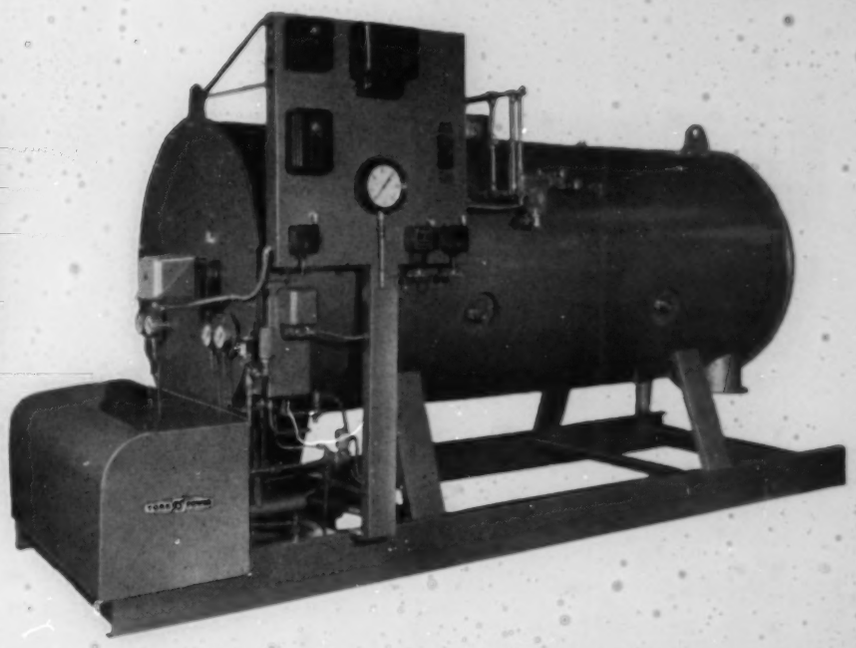


HOW MUCH CAN YOU SAVE BY INSTALLING A STEAM-PAK YORK POWER GENERATOR

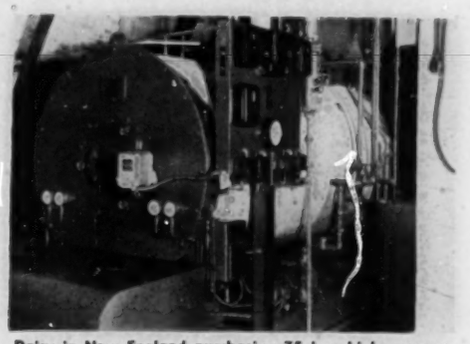
$20,000.00 SAVED ANNUALLY



Textile Mill in New England formerly used 40 tons of coal at $13.00 per ton; now uses 5,000 gal. of oil per week at 5c per gal.—saving $270.00 per week on fuel cost plus saving salaries of three men. Total saving approximately $20,000.00 per year.



$4,000.00 SAVED ANNUALLY



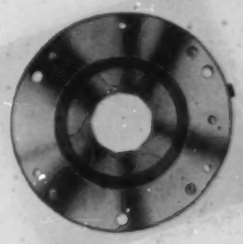
Dairy in New England purchasing 75 h.p. high pressure York-Shipley Steam-Pak reduced cost approximately $12.00 per day, including cost of coal, fireman and maintenance.

Write for

CASE HISTORIES

ON HOW OTHERS HAVE SAVED MONEY WITH STEAM-PAK

THE ONLY STEAM GENERATOR with *Iris Shutter*



Watch Dog of Your Boiler Efficiency. Whether you use gas or oil, absolute control of the air injected into your burner to provide proper flame control is the most important factor toward efficient operation of any steam generator. The famous Iris Shutter, Watch Dog of Efficiency, actually meters the air volume, synchronizing air and oil or gas adjustment from partial load to full load to provide proper flame control.

Steam-Pak Generators are built in capacities from 15 H.P. up, for low or high pressure steam or hot water, for light or heavy oil, combination gas and oil, or straight gas.

Can you save money with a Steam-Pak? There is one way to find out . . . ask a Qualified Heating Engineer. Your York-Shipley Distributors are thoroughly qualified to analyze your problem and determine savings. See your nearest York-Shipley Distributor or write, wire or 'phone

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Industrial Division

1219 Jessop Place, York, Pennsylvania **'Phone 7861**

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It's downright *easier* to indicate precisely the Allenco products for each job. Easier because data is *handy*: A.I.A. file 29e2 (see below); also Sweet's Architectural Catalog File. Easier because *complete* range *concisely* presented, optional factors *cross-indexed*. Easier because our consulting engineers will work out any appropriate problem with you.

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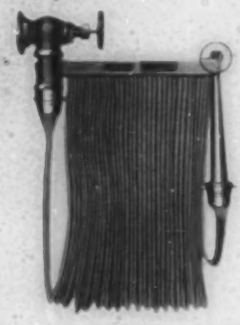
You can't do wrong by specifying ALLENCO products, because their reliable quality and prudent economy has been distinctive for years. Whatever units are indicated, you simply can't buy better! For example—



Almost any hose rack unit "tests" all right *without* pressure. Few, if any, match this patented ALLENCO-Bowes in split-second free-running *under pressure* as in actual emergency. Complete line of cabinets, couplings, extinguishers, hose, valves, etc.

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Established 1887

W. D. ALLEN

Manufacturing Co.

CHICAGO 6 NEW YORK 7

THE RECORD REPORTS

CANADA

(*Continued from page 16*)

marked off year by year, but only in terms of many years. On the provincial level, programs of the Associations in British Columbia, Manitoba, Ontario and Saskatchewan deserve mention.

"Regardless of how much money is available, stress is always laid on the necessity of each individual architect doing a good public relations job in his daily contacts. Most chapters and associations do not hesitate to speak out on matters of public interest. They urge their members to participate in community affairs, accept positions of responsibility in projects designed to benefit their fellow citizens.

"Partial or full use of press or radio facilities are characteristic of the majority of programs. Better press relations and methods of securing more complete coverage of architecture and architectural events are sought, with radio efforts usually confined to free broadcasts of the public service type. Preparation of exhibitions, establishment of speakers' bureaus, and publication of pamphlets for controlled or common distribution are other common activities."

Nine Months' 1950 Building Nearly at Total for 1949

Construction contracts awarded in September helped swell the total for the first nine months of 1950 to over $1 billion, or little less than the amount recorded for the entire year of 1949.

Figures from MacLean Building Reports Ltd. show that residential, commercial and institutional contracts continued to increase. But the biggest rise, both dollar- and percentage-wise, was in engineering projects. They soared $9.1 million this September over last, an increase of 96 per cent.

Defense Plans Underscored By Government Appointment

Determination of the federal government to swing a scythe on non-defense construction is seen in the appointment of R. G. Johnson as special consultant to Canadian Commercial Corporation. This Crown company is charged with responsibility for all spending in connection with the national safety.

(*Continued on page 212*)

for

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WHITE FINISH*

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And it's here that Ohio White Finish is scientifically produced from hand picked, kiln burned rock, to offer the building industry a lime that's always uniformly right, guaranteed 99½% pure.

For finished plastering it makes a pure white putty of great plasticity, easy to work, smooth spreading. There's none better.

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THE RECORD REPORTS

CANADA

(*Continued from page 210*)

Mr. Johnson, who is well known as general manager of the Canadian Construction Association, will assist in the development of a gigantic defense building program. Its urgency and magnitude are emphasized by estimates that retrenchment on non-defense construction may run as high as $500 million. The full amount will not be known till the government closes its books for the 1950–1951 fiscal year on March 31.

A call for cooperation was made by Mr. Johnson soon after Trade Minister Howe announced his appointment. "It is going to take a real effort," he said, "to meet the defense needs as well as carry the heavy load of civilian construction requirements."

High Urban Growth Costs Are Forecast in Next Five Years

Larger Canadian municipalities will spend about $560 million to expand basic services during the next five years, according to David B. Mansur, president of the Central Mortgage and Housing Corporation.

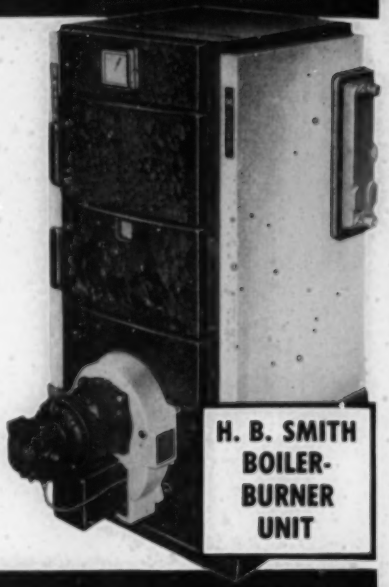
Average natural growth in communities of 5000 population or over is estimated to be slightly better than three per cent annually or about 16 per cent by the end of 1955. Services will have to be provided on the basis of one acre per 100 of present population. Cost of servicing is put at $80 per capita of present population, or about $8000 per acre.

(*Continued on page 214*)

Photo: Everett Roseborough

Toronto's Small Fry Restaurant uses traditional materials — brick, wood, glass — in a new way. Gordon Adamson, Architect

HOW TO MAKE A CLIENT HAPPY



. . . and REDUCE HEATING COSTS!

The Smith-Mills "100" Boiler-Burner—a complete heating plant for the average home — comes in four efficient models for steam or hot water systems.

The client for whose home you recommend this compact unit will enjoy sunny warmth and 24-hour hot water.

LOTS OF HEAT!

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The completely automatic oil burner, built right into the boiler, will give trouble-free service. Tank or tankless domestic water heater.

Here's low-cost comfort and convenience, ready right now! Complete data in Sweet's Architectural Catalog.

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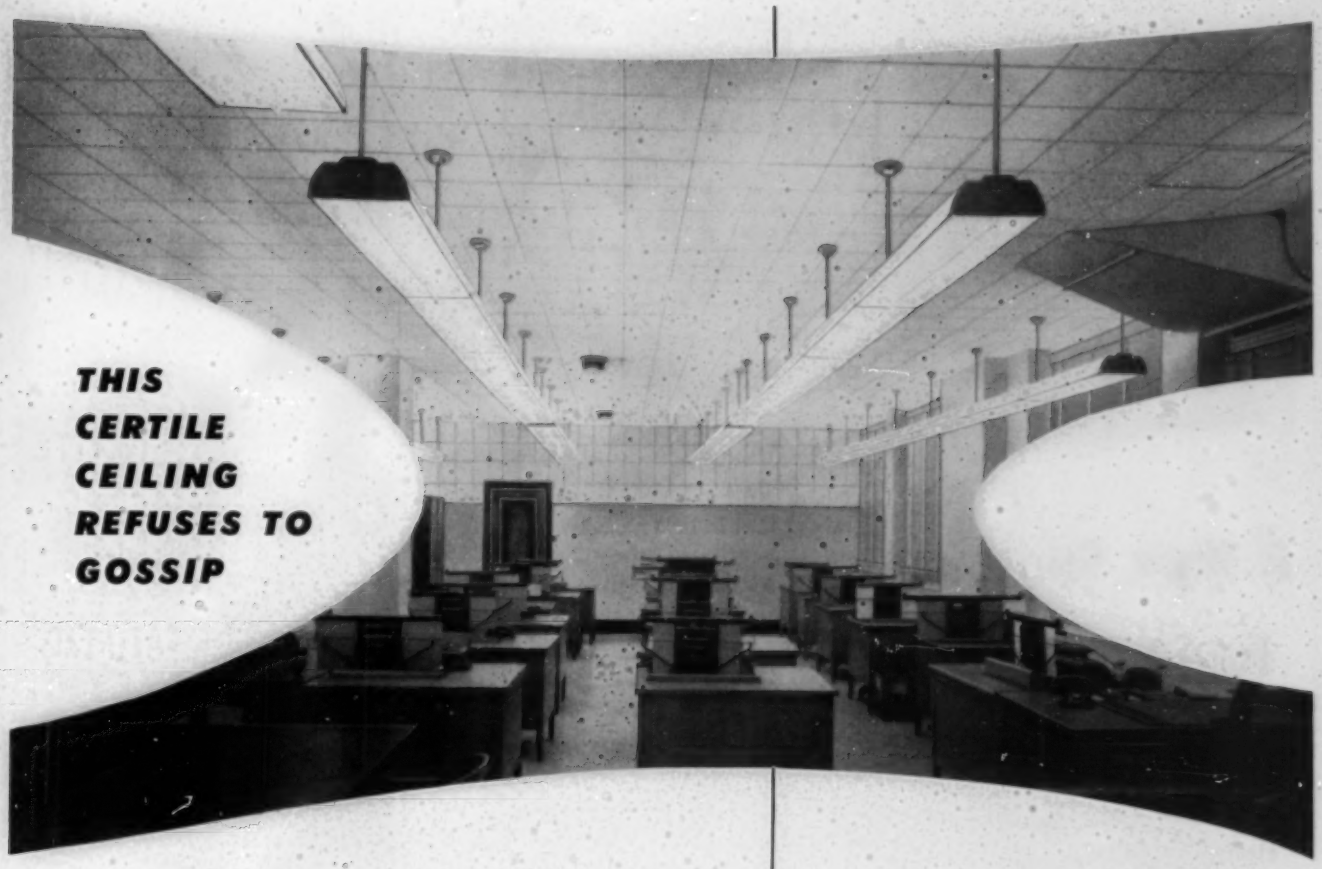
CAST IRON BOILERS
THE H. B. SMITH CO., INC.
WESTFIELD, MASS.
Most complete line in the world of cast iron boilers for heating



THIS CERTILE CEILING REFUSES TO GOSSIP

It keeps everything it hears to itself—all the chatter and clatter, the pangs and bangs of a machine-ridden office are absorbed quickly and quietly by its famed Fiberglas* ears.

While CERTILE's absolute refusal to pass on office gossip is its most popular characteristic, it has many other qualities that make it *far more than just another acoustical tile.*

Examine this checklist of CERTILE characteristics. It invites comparison.

CHECKLIST	CERTILE	OTHER
Converts sound into mechanical energy	√	
Converts sound into thermal energy	√	
Incombustible	√	
Washable	√	
Repaintable	√	
Applied by cementing	√	
by screw attachment	√	
by suspension system	√	
High insulation	√	
75% light reflection	√	
Painted bevels	√	
Moisture resistant	√	
Warpproof and shrinkproof	√	

CERTILE is available in perforated and plain surface, in ¾″ and 1″ thicknesses, in 12″ x 12″ and 12″ x 24″ slabs.

Where low-cost, fire-safe acoustical installation is wanted, **CERTACOUSTIC** tile is ideal. It, too, contains Fiberglas base. It has most of the fine qualities of **CERTILE**.

Approved acoustical applicators are available for consultation and advice. Contact one of the district sales offices for the name of the applicator in your area.

*Trade-Mark Reg. U.S. Pat. Off. by Owens-Corning Fiberglas Corporation

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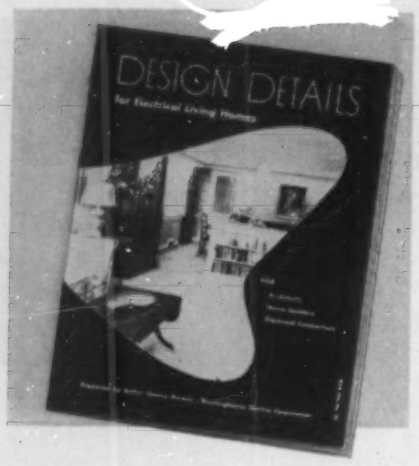
RICHMOND, CALIF. • SALT LAKE CITY, UTAH



A New Book for Architects

The increasing use of electricity throughout the home emphasizes the importance of electrical planning.

To help with your planning, those electrical features that have won wide public approval have been incorporated in this "Design Details" book.

It fills a real need for construction details on valance, cornice, cove, soffit, pinhole spot, undercabinet and other unusual lighting effects. Kitchen and laundry plans are also shown, as well as essentials of modern wiring. Photographs of actual installations illustrate these planning ideas. Architectural details are accurate and complete.

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G-10113-A-1

THE RECORD REPORTS

CANADA

(*Continued from page 212*)

Since seven million people now live in communities of 5000 population or over, the overall cost of expansion during the next five years reaches the $560 million total.

Architects' Incomes in 1948 High Among Canadian Groups

The Department of National Revenue reports that in 1948 architects and engineers constituted the third highest income group in Canada. Only doctors and lawyers earned more money.

Here's a detailed breakdown:

Category	*Number*	*Average Income*	*Average Tax*
Lawyers	4060	$8309	$1963
Doctors	6990	8274	1786
Architects & Engineers	1200	7455	1554

Trailing architects and engineers were dentists, osteopaths and chiropractors, business partners, investors, sole business proprietors and salesmen. As in previous years, nurses were at the foot of the list. There were 3250 of them in 1948 with an average income of $1381. They paid an average tax of $79.

Engineering Enrollments Show Decline for 1950–51

Enrollments in Canadian universities for 1950–51 show a downward trend, according to a recent announcement by Hon. Milton F. Gregg, Minister of Labor. This is to be expected, he explains, because for the past few years classes have been swollen far beyond normal capacity by thousands of war veterans.

One of the faculties hit is engineering (which includes architecture). The annual number of engineering graduates has risen from about 400 in 1921 to approximately 3600 in 1950. It is estimated that this figure will decline to about 1100 in 1955, then gradually increase to about 1200 in 1960.

Minister Gregg points out that in dealing with figures for engineers, the variation in the employment market between branches of engineering may be overlooked. As examples he cited mining engineering as a branch which would be likely to have a shortage of graduates in the next few years, while electrical engi-

(*Continued on page 216*)

They're aids for the Architects...

THESE WIZARDS WITH WOOD

FOR FINISHING FIR PLYWOOD

For stained "natural" effects — Firzite tames the garish wild grain; assures even absorption of stain, hence a subdued rich appearance.

For painted or enameled jobs — Firzite minimizes face checking and grain raising.

For blond, pickled, or tinted tones —White Firzite produces a beautiful real "woodsy" effect. . . . . **FIRZITE**

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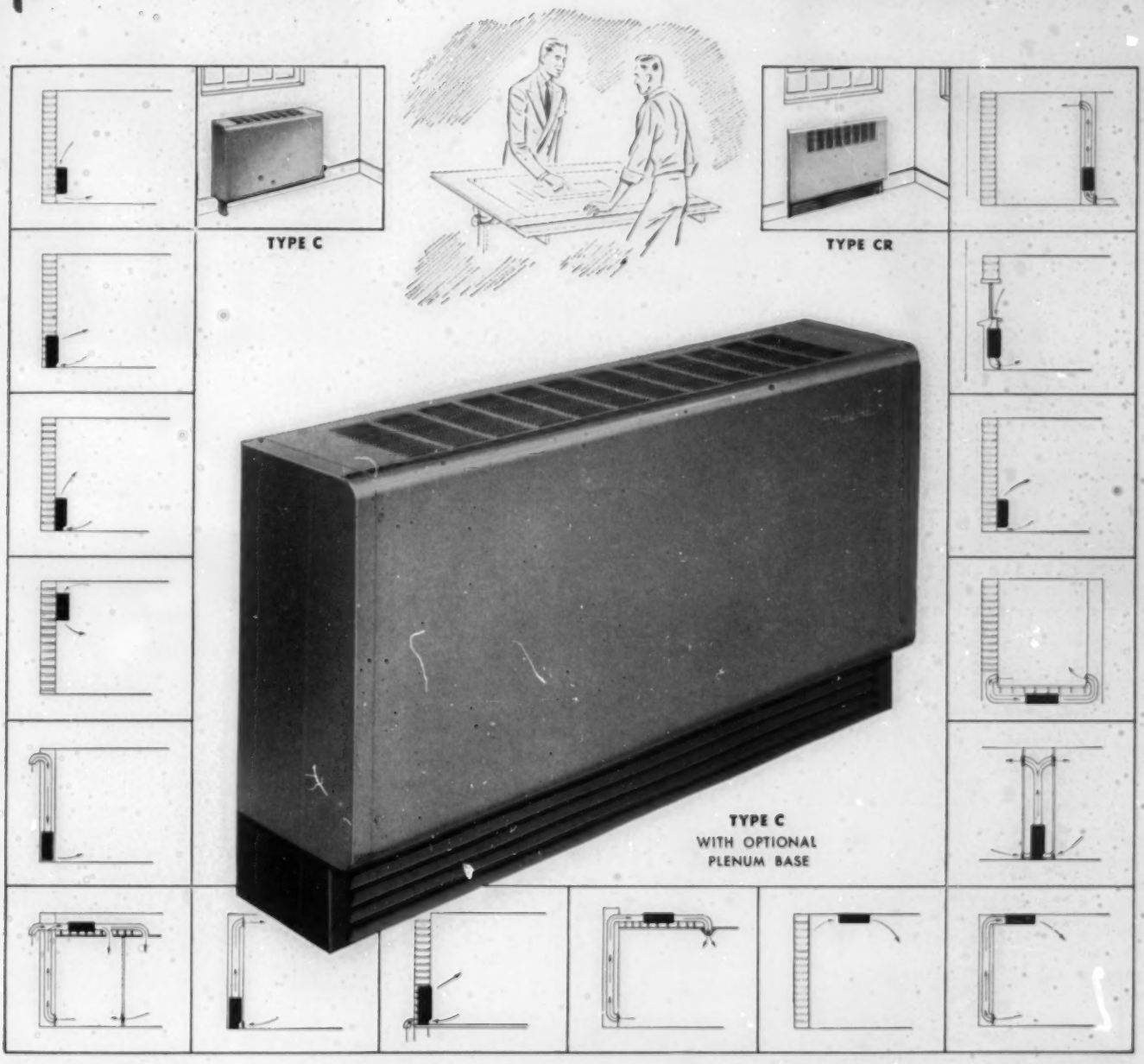
UNITED STATES PLYWOOD CORP.
Dept. 80, 55 W. 44th St., New York 18, N. Y.

Solve your heating and cooling problems with new Modine Cabinet Units



Whatever your heating and cooling problems — there's a new Modine Cabinet Unit to fit your needs. A single unit for forced hot water heating, chilled water cooling. Steam models for heating only. Smartly designed and easy to clean and service. Quiet operation and quick response make Modines ideal for modern commercial and public buildings. Two basic types in five sizes . . . with optional equipment for meeting a wide range of application requirements.

WRITE FOR NEW BULLETIN 550 TODAY! *Your Modine representative is listed in the classified section of your phone book. Or write Modine Mfg. Co., 1510 Dekoven Ave., Racine, Wis.*

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■ Low cost home cooling is here! The Hunter Package Fan is a compact, powerful ventilating fan that is easily installed in any attic to pull in fresh, cool breezes and push out stale, humid air. Thousands are now in use throughout the nation.

Installation of the Hunter Package Fan is simple and inexpensive. Fan, motor and suction box are all in one unit that requires only a ceiling opening in hallway and 18" clearance in attic. Fan rests on attic floor; shutter fastens to ceiling opening. No "extras" to buy or build.

HUNTER PACKAGE ATTIC FANS are available in four models, ranging from 4750 CFM to 9500 CFM, to fit any home size and climate. Quiet, powerful and dependable. Manufactured by Hunter, exclusive fan makers since 1886.

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396 South Front St., Memphis, Tenn.
Send free copy of "How to Cool for Comfort" to:

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THE RECORD REPORTS

CANADA

(*Continued from page 214*)

neering, which had been the most popular choice of veteran students, appeared likely to show a slight surplus for the time being.

Steel Remains Short

It is practically impossible to buy sheet steel in any gauge, according to the Purchasing Agents' Association of Toronto.

As a result, manufacturers find it exceedingly difficult to maintain production. No relief is in sight at present, and it is regarded as unlikely that the situation will be much improved even by the second half of next year.

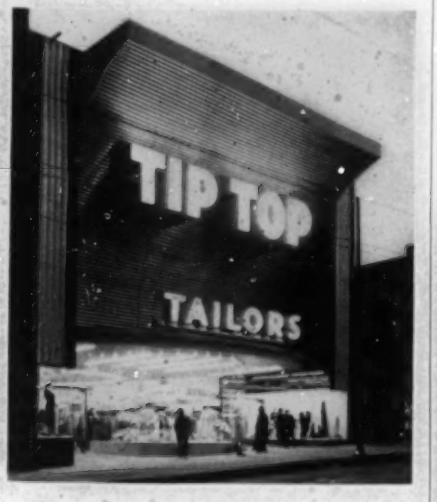


Photo: Aluminum Company of Canada, Ltd.

Aluminum facing is used in an unusual way to achieve a striking storefront for Tip Top Tailors, made-to-measure clothiers, in Vancouver. The firm has many branches. Claude Logan was the designer

U. S. Hesitation on Lumber Makes U. K. Order Welcome

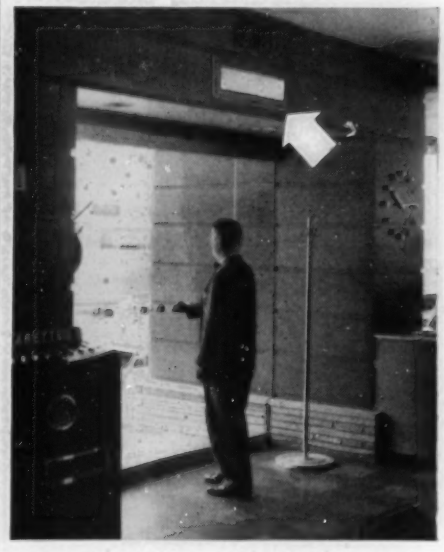
Another big United Kingdom lumber order, the second within a month, has been placed in British Columbia. It's for 90 million board ft, valued at roughly $10 million.

Operators are jubilant, since pileups have been beginning to show in some grades and prices have dropped as much as $15 per 1000 ft on both sides of the Canadian-U. S. border. Chief reason for decline has been the "scared" feeling

(*Continued on page 218*)

SIGNAL SYSTEMS
hospital | commercial

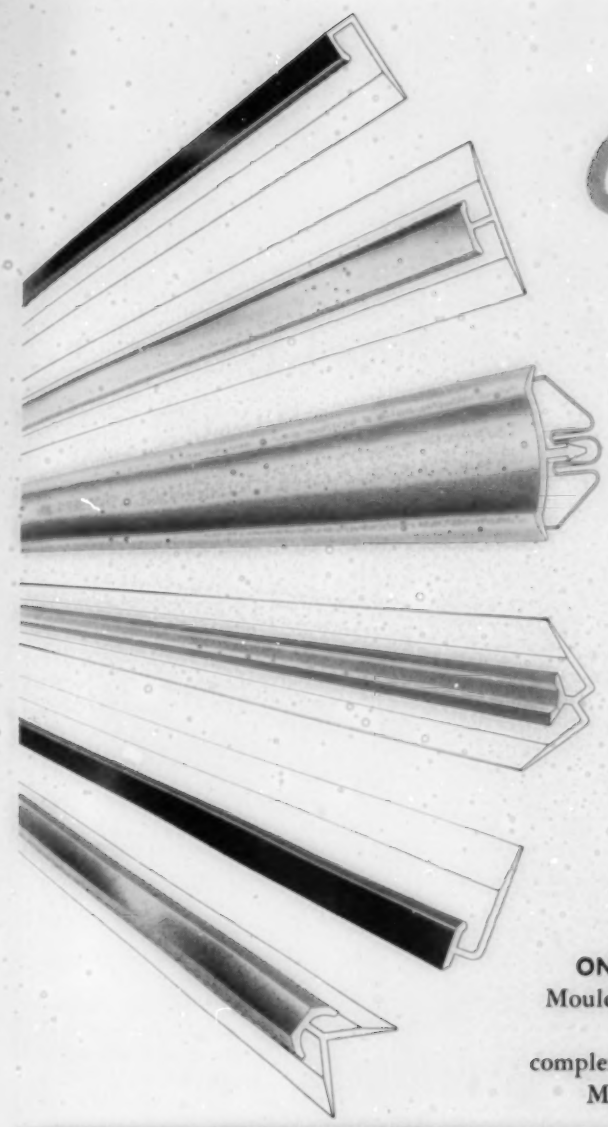
A Cannon Hospital Installation
. . . arrows point to 3 digit paging annunciator, nurses' lamp annunciator and pilot lights, a few of the many hospital signal items Cannon has been making for well over a quarter of a century.



A Cannon Commercial Installation
. . . arrow points to lamp annunciator above restaurant door used to signal waitresses as orders are ready. Other commercial installations include department stores, industrial plants, offices, etc.

Write to Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt St., Los Angeles 31, Calif. or contact one of the 28 Cannon representatives located in principal U. S. A. cities. Canadian plant and offices: Toronto, Ontario. Export: Frazar & Hansen, San Francisco, New York and Los Angeles.

CANNON ELECTRIC



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COLOR-MATCHED MOULDINGS

for Marlite

NEW COLOR HARMONY for Marlite walls and ceilings in every type of residential and commercial interior is now possible with this brand-new line of Marsh Color-Matched Aluminum Mouldings! Featuring the same durable plastic finish as genuine Marlite panels, they need only an occasional wiping with a damp cloth to keep them spotless. The permanent finish *seals out* dirt, grease, moisture . . . seals in all the striking beauty!

PLEASING OVER-ALL EFFECTS—A complete color range is available to match all standard Deluxe and Velvetex Marlite colors.* Exact matching makes Marlite walls present smooth, beautiful, uninterrupted color. And where contrast is desired, the new Color-Matched Mouldings give free reign to your design ideas.

ONE FOR EVERY COLOR SCHEME—With the new Color-Matched Mouldings for Deluxe and Velvetex Marlite, there is now a Marsh Moulding for *any* interior treatment. Special Mouldings complement Wood Pattern and Marble Pattern Marlite, and the regular Marsh Aluminum Alloy Mouldings are available to suit those customers who prefer bright metal trim. Now you can plan Marlite interiors that will please the most fastidious clients—with Marsh Color-Matched Aluminum Mouldings! Mail coupon for complete details.

**Yellow, Cream (Eggshell), Blue, Coral (Suntan), Green, White, Persian Red, Pearl Gray, Royal Blue, Black and Maroon.*

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Title_____

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to Tomorrow's NEW Problems

Now that priorities, allocations, cut-backs, and other essential restrictions have returned to the industrial scene, the heating, ventilating, and air-conditioning picture is certain to undergo significant changes in the days to come — to pose new problems for architects, consulting engineers, and contractors. That is why attendance at this foremost Exposition of its kind — largest ever staged — takes on greater importance and timeliness than ever. The wealth of first-hand information available here on latest developments, newest trends, available equipment and supplies, and sources of supply, may prove to be an invaluable business asset for the uncertain times ahead.

Over 300 exhibitors with their technical representatives will be on hand to show and tell what the future offers for heating, ventilating and air conditioning in all types of commercial and public buildings, industrial plants, and homes. In no other way can so many helpful ideas and valuable contacts be obtained, and so much equipment seen and compared in so little time . . . all so essential to solving tomorrow's new problems.

So plan now to take advantage of this big opportunity. Note the dates.

Auspices of the American Society of Heating & Ventilating Engineers

Management International Exposition Company

THE RECORD REPORTS

CANADA

(*Continued from page 216*)

of west coast builders over tightening credit controls and labor and supply lines.

"Americans don't blow hot and cold," says one important exporter, "they go torrid and freezing!"

Construction Is High On Invested Capital Return

Detailed information on operations of Canadian industry in 1948 have been made available by the Department of National Revenue. The figures are based on income tax returns for that year.

The construction industry showed the highest return on invested capital. It also showed the biggest increase in return from the 1947 level.

In addition, the industry displayed the biggest margin of profit — before taxes — in 1948, and the biggest increase in margin over 1947.

These remarkable achievements reflect the postwar expansion and modernization programs carried on in all phases of construction activity.

House Building Code for Small Cities Published

A "Code for Dwelling Construction," designed for small municipalities, has been published by the Division of Building Research, National Research Council. It will form part of the revised National Building Code.

All subcommittees for further studies on the National Building Code have been appointed by the Associate Committee dealing with it and their work is expected to be in full swing early in 1951.

Planning Act Violation Brings Fine to Vendor

Maximum penalty for contravention of the Ontario Planning Act was imposed for the first time when Magistrate Earl Hand of Islington levied a fine of $500 on the vendor of six parcels of land who failed to secure prior approval of the local planning board.

The sale came to light when purchasers found they were refused building permits because their lots did not front on a registered road.

A New Guide for Hospital Architects

PSYCHIATRIC SECTIONS IN GENERAL HOSPITALS

By PAUL HAUN, M.D.

Chief, Hospital Construction Unit, Psychiatry Division Veterans Administration

Today, no hospital is complete without a psychiatric unit. The problem, however, is a complicated one because in the design and construction of such a unit every aspect of the environment must be strictly controlled.

Fortunately, all the architect need know is completely outlined in "Psychiatric Sections In General Hospitals." Here are specific, reason-why, instructions covering everything from shafts and stacks to hydrotherapy suites.

"Psychiatric Sections In General Hospitals" is by all odds the most provocative work on specialized architecture since the publication of "Hospital Planning." It is a non-technical book for technical men; one that gives, for the first time, clear and reasoned specifications on a branch of architecture that has leaped from obscurity to prominence in a few short years.

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Because of the specialized nature of this material, "Psychiatric Sections In General Hospitals," just off the press, is not readily available at most book stores. So use the coupon below to send for your copy today. Price $4.00, including postage.

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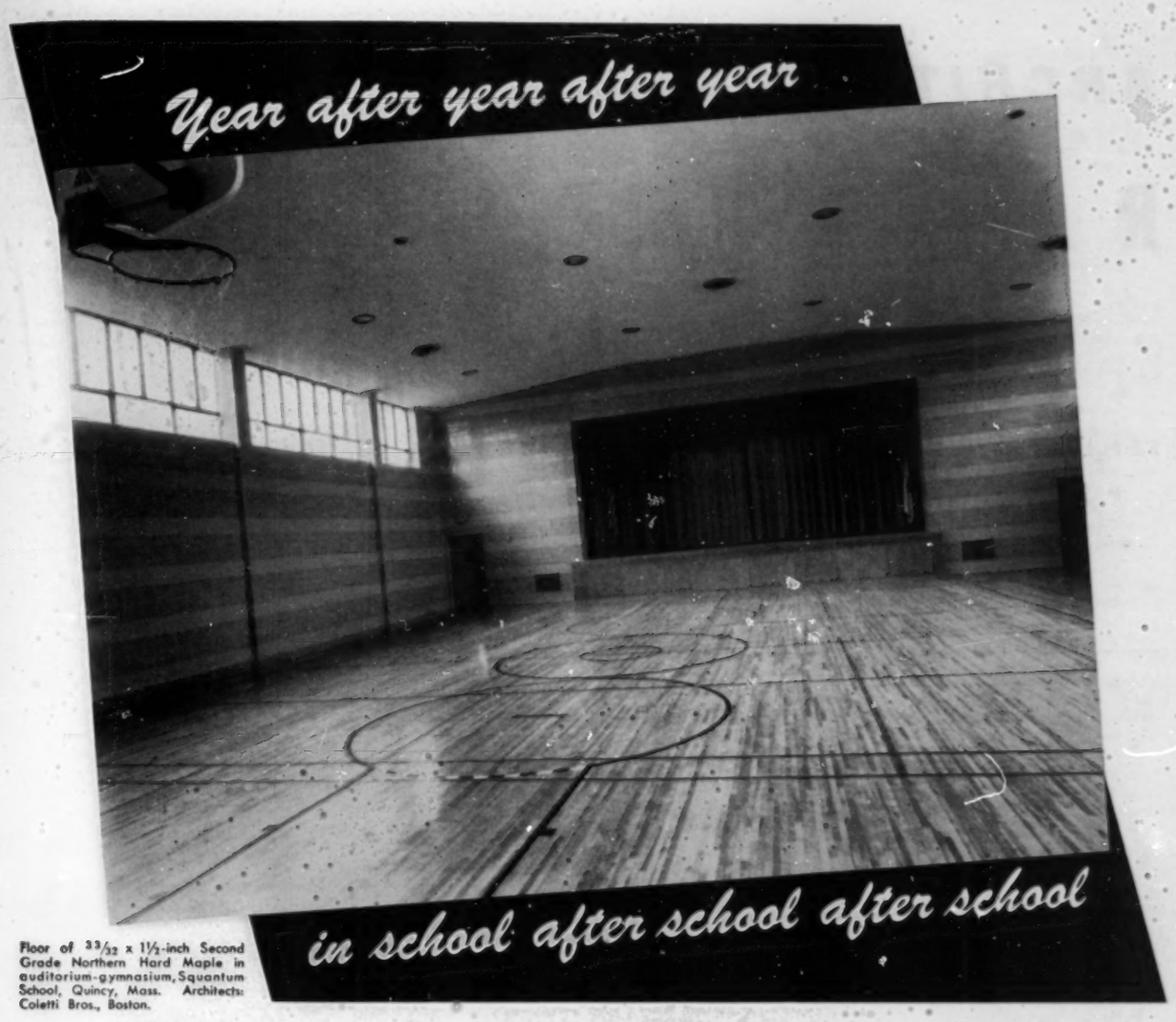

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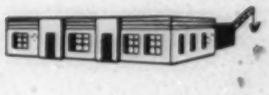

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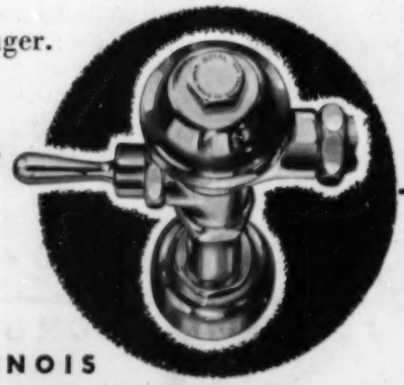

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